

Half the Firms, Double the Profits: Public Firms' Transformation, 1996-2022

Law Working Paper N° 771/2024

October 2024

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The number of public firms in the United States has halved since the beginning of the twenty-first century, causing consternation among corporate and securities law regulators. The dominant explanations, often advanced by Securities and Exchange Commissioners when considering policy initiatives, come from over- or under-regulation of the stock market. The central legal explanation is that the heavy burden of corporate and securities law has made the cost of being public too high. Conversely, goes the second legal explanation, previously-strict capital raising rules for private firms have loosened up, allowing private firms to raise capital nearly as well as small- and medium-sized public firms. Private firms are displacing public ones. These two views see legal imperatives as explaining the sharp decline in the public firm. We challenge the implications of this thinking. While the number of firms has halved, public firms' economic weight has not halved. To the contrary, the public firm sector has held steady for the past quarter-century by every other measure we examine, growing in line with the economy, and, for several central qualities, has grown more than the economy: Profits and stock market capitalization have grown faster than the economy, while revenues and investment have kept up with the economy's growth. We emphasize that, at their peak, public firm profits doubled from 1996 and public firm net income now makes up more than 6% of the country's GDP, much more than in 1996. This rise in profit has not been stressed in prior work looking at the declining number of public firms. Rising profit has implications about what really is happening in the public firm sector, which we consider next. The second challenge we pose is whether the explanation for the changing configuration of the public firm sector lies primarily in corporate and securities law's burdens. To explain the disappearance of nearly 3,500 of the 7,300 that were publicly-traded in 1996, one must explain not just the disappearance of many small firms, but the disappearance of firms at, near, or larger than, the median-sized firms of 1996. For the disappearance of those firms towards the middle of the 1996 distribution, the legal explanations seem implausible. In other policy circles—at the Federal Trade Commission or the Justice Department's Antitrust Division, for example—policymakers ask why American industry is so much more concentrated now, with fewer firms in most industries today than there were at the end of the twentieth century. Yet these policymakers—and their academic correlates—bring forward industrial organization and antitrust explanations, not corporate or securities regulation. Little crossover exists between these two policymaking circles or these two academic inquiries, one focusing on corporate and securities regulation (the SEC) and the other on competition (the FTC). We bring forward real economy changes that could readily explain the reconfiguration of the American public firm sector to one that is more profitable, more valuable, and with bigger but fewer firms. These real economy developments largely tie to industrial organization via changes in the efficient scope and size of the firm (according to much academic analysis) or changes in antitrust enforcement (according to common progressive political views). In a single article, this explanatory effort can only be exploratory. We build a baseline: There are fewer firms, but the firms are much more profitable, bigger, with investment, revenue, and employment growing in line with the economy's growth since 1996, and often in more concentrated industries. We show why the legal explanation is unlikely to be the complete story for the package of changes over the past quarter-century and plausibly not even the most important one. Corporate policymakers should adjust appropriately.

Keywords: IPOs, public companies, corporate law, private equity, venture capital, securities regulation, merger guidelines, monopolization, concentration, Sarbanes-Oxley, antitrust

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The number of public firms in the United States has halved since the beginning of the twenty-first century, causing consternation among corporate and securities law regulators. The dominant explanations, often advanced by Securities and Exchange Commissioners when considering regulatory or deregulatory initiatives, come from over- or under-regulation of the stock market. The central legal explanation is that the heavy burden of corporate and securities law has made being public too costly. Conversely, goes the second legal explanation, previously strict capital-raising rules for private firms have loosened up, allowing private firms to raise capital nearly as well as small- and medium-sized public firms. Private firms are displacing public ones. These two views see legal imperatives as explaining the sharp decline in the public firm.

We challenge the implications of this thinking. While the number of firms has halved, public firms' economic weight has not halved. To the contrary, the public firm sector has held steady for the past quarter-century by every other measure we examine, growing in line with the economy, and, for several central qualities, has grown more than the economy: Profits and stock market capitalization have grown faster than the economy, while revenues and investment have kept up with the economy's growth. We emphasize that, at their peak, public firm profits doubled from 1996 and public firm net income now makes up more than 6% of the country's GDP, much more than in 1996. This rise in profit has not been stressed in prior work looking at the declining number of public firms. Rising profit has implications about what really is happening in the public firm sector. Rather than the fewer firms signalling a weakening public firm sector, the public sector by most measures held steady or strengthened during past quarter century. The overall picture is more one that could upset progressive critics of the large corporation than worry policymakers that the public firm is fading.

The second challenge we pose is whether the changing configuration of the public firm sector is primarily due to corporate and securities law's burdens. To explain the disappearance of 3,500 of the 7,300 firms that were publicly-traded in 1996, one must explain not just the disappearance of many small firms, but the disappearance of firms at, near, or larger than, the medium-sized firms of 1996. For the disappearance of those firms toward the middle of the 1996 distribution, the legal explanations seem implausible. In other policy circles—at the Federal Trade Commission or the Justice Department's Antitrust Division, for example—policymakers ask why American industry is so much more concentrated now, with fewer firms in most industries today than there were at the end of the twentieth century. Yet these policymakers—and their academic correlates—bring forward industrial organization and antitrust explanations, not corporate or securities regulation. Little crossover exists between these two policymaking circles or these two academic inquiries, one focusing on corporate and securities regulation (the SEC and corporate securities academics) and the other on competition (the FTC and antitrust and I.O. academics).

We bring forward real economy changes that could readily explain the reconfiguration of the American public firm sector to one that is more profitable, more valuable, and with bigger but fewer firms. These real economy developments largely tie to industrial organization via changes in the efficient scope and size of the firm (according to much academic analysis) or changes in antitrust enforcement (according to common progressive political views). In a single article, this explanatory effort can only be exploratory. We build a baseline: There are fewer firms, but the sector is more profitable, bigger, with investment, revenue, and employment growing in line with the economy's growth since 1996, and often in more concentrated industries. The public firm sector is stronger, not weaker.

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INTRODUCTION

A major long-term strength of the American economy has been its capital markets' capacity to rapidly grow firms. An entrepreneur lacking capital but with an idea, an invention, or a new technology can raise much money rapidly in public stock markets. The economy develops, and consumers are better off. A new but risky technology with a high potential payoff for consumers, investors, and the economy if it succeeds can, in this positive vision, often be financed by public stock markets but not by banks or via other private financial channels. Public stock markets can diversify large risks that private capital markets cannot. That capacity facilitates greater investment and innovation, by providing capital to smaller and younger companies with novel products and services that disrupt and challenge encrusted, less vigorous firms. At the same time, ordinary investors obtain higher returns by investing in the stock market than by, say, depositing their money in a savings bank, and they can usually sell their investments easily when they need to.

Analysts and policymakers worry that this positive process is waning. In 1996 the U.S. had more than 7,000 public firms; by year-end 2022 that number had dwindled nearly in half. Fewer private firms went public. Many already-public firms disappeared—via merger, going private, or failure—but were not replaced. In a widely-shared dyspeptic perspective, a foundation of American economic success and people's well-being is weakening.¹

We confirm the precipitous fall in number. And the proposition that public firms are disappearing—that the sector's weight in the economy is diminishing—follows easily from that fall. But it's a step that should not be taken. While their *number* declined, their collective economic *weight* did not. Public firms generate *more* profit than ever. Firms are bigger, and many industries are more concentrated. *Total* sales, investment, revenue, and value grew in the past quarter-century as fast as the economy

¹ Jamie Dimon, the CEO of JPMorgan Chase, provides a recent instance of a public business figure lamenting the weakening of public stock market in the U.S. In the 2023 letter to shareholders' section on "Shrinking Public Markets," he reports a "diminishing role of public companies in the American financial system. From their peak in 1996 at 7,300, U.S. public companies now total 4,300 The trend is serious and [regulation may be the main cause]. Is this the outcome we want?" Moreover, "the pressures to retreat from the public market are mounting" JPMorgan Chase & Co., Chairman & CEO Letter to Shareholders, Annual Report 2023, <https://reports.jpmorganchase.com/investor-relations/2023/ar-ceo-letters.htm>.

Such views seem to be widespread among American executives and we trace similar views to multiple SEC commissioners.

grew. By most measures, the public firm sector has become stronger, not weaker, since the number of firms peaked in 1996.

Three major reconfigurations occurred roughly simultaneously: profits roughly doubled as a percentage of GDP, the stock market's aggregate value doubled relative to GDP, and the number of firms nearly halved. The persistence in public firms' overall economic weight and profitability leads us to reassess the power of the legal explanations for the full decline in number. American corporate and securities law supports as much, or more, economic activity as it did when the number of public firms peaked in 1996. We emphasize the doubling of public firm profits as a percentage of American gross domestic product. This doubling has not been emphasized in prior work and has strong implications for how to weight explanations as to what is happening in the public firm sector. If the public sector were suffering from irresponsibly increasing burdensome pressure, we would not expect to see its profits doubling. Some policymakers are concerned that the sector is weakening by losing so many firms; a more comprehensive look at what happened brings forward a different potential concern—that it is more concentrated and as powerful as ever.

The explanations for the halving in number given in corporate policymaking legal circles—often by Securities and Exchange Commissioners considering policy initiatives—come from corporate and securities law regulation. Corporate and securities law has made the legal burdens of being public too heavy, it's said. And private capital-raising rules have loosened up enough over the decades such that private firms can raise capital as well as small- and medium-sized public firms. In some critics' and policymakers' thinking, the rules are now too loose.

These legal explanations should not be seen as so central to why we have fewer public firms. Others have challenged the strength of the overregulation thesis, showing its inconsistencies and weaknesses, but without offering an alternate explanation for the quarter-century decline from more than 7,000 public firms to fewer than 4,000.

We bring forward new data—especially on profitability—and an alternative explanation. Real economy changes in the public firm sector can explain the trends without securities regulation being central. We push forward plausible real economy, industrial organization explanations to add to, and perhaps outweigh, corporate law factors. Securities regulation pressure on small firms explain why some firms did not go public, but it has trouble explaining why nearly 3,500 larger firms disappeared.

Full analysis of these real economy explanations requires multiple researchers' efforts. We set forth a framework for why real economy shifts must be in play, and we bring forward some evidence fitting better with the industrial organization explanation than with any Legal Explanation. The Legal Explanations have trouble fully explaining the halving in number and the doubling of profit. Their partial relevance cannot be denied, but their dominance should be challenged, and we challenge it here.

We advance industrial organization hypotheses. These hypotheses come in two major varieties—one is that antitrust enforcement weakened, allowing more mergers and concentration than before. This is a policy perspective popular in many public, political, and media circles and it fits better with the overall trends on profits, revenues, and employment than the Legal Explanations, but it is less vigorously supported in academic industrial organization work. The I.O. Hypothesis's second variety is that

rising economies of scale and similar changes made larger size more important in many industries, pushing for fewer firms than before. This structural perspective is supported more strongly in academic industrial organization work than in policy circles.

Consider that in other Washington policy circles—at the Federal Trade Commission and the Justice Department’s Antitrust Division—policymakers focus on the increased concentration—fewer firms—in many industries. These policymakers contemplate phenomena related to the declining number of firms, but little crossover exists between these two policymaking groups and their academic correlates. Industries have concentrated with fewer, albeit larger and more profitable firms in industry after industry. That concentration usually entails that the number of public firms decrease, often by merger. Thus, in one part of Washington, Legal Explanations emanating from corporate securities law dominate, while in another part of Washington, Industrial Organization Explanations dominate. Both cannot be dominant.

* * *

In Part I, we set forth the problem to explain and the ascendant explanations in corporate and financial circles. The problem to explain is the halving of the number of public firms since the mid-1990s. The ascendant explanation in corporate policy and academic circles is the Legal Explanation. Corporate securities law shoulders the blame. The halving most likely indicates misdirected corporate securities rules. This though has the potential to conflate two processes: one, of legal costs and benefits, and the other of industrial organization changes; we need to be careful not to attribute changes due to the latter to the former.

The Legal Explanation comes in two varieties. The first variety is that the legal burdens of being a public company are costly for small firms, so many stay private. The second variety is that private firms can now raise capital more easily than they could in the twentieth century. Hence, they have less reason to incur the burdens that come with registering with the authorities as a public firm. One variety of the Legal Explanation has law constraining public firms, while the other has it boosting private firms by deregulation. We examine all SEC commissioners’ statements on the issue from the past decade to show that they explain the declining number of public firms with one variety of Legal Explanation or the other. While these two explanations vie for allegiance inside corporate circles, the two have a core common feature. Each sees corporate securities law as the dominant driver for the declining number of public firms, not Industrial Organization, which goes unmentioned.

Part II is the center of this Article. There we go deeper into what is happening to our public firms. It’s natural to think that the public firm sector is shrinking since their number is diminishing. That syllogism fits well with a view that the public firm is no longer the best place for much economic activity. But that idea of a weakening, shrinking public firm sector should not define the problem, because it is incorrect. If public firms had become poor places to do business because of legal burdens, then the total profitability of the public firm sector should be shrinking as well. But profits are not declining. Profits grew nearly twice as much as the economy grew even while the number of firms was declining.

By this measure—its rising profits—the public firm sector became economically *more* important. Firms have disappeared, but the public firm sector is no weaker, and

by several measures is much stronger. Some policymakers and political actors might be concerned with its strengthening, as the evidence points more to a strengthening than a weakening.

We then assess the possibility that newly dominant FAANG firms drove the change. Even outside the FAANG firms, profits and value rose sharply; indeed, profits and value grew as fast as the economy during the past quarter century even for firms outside of the S&P 500.² Meanwhile, other measures—like revenue, investment, and employment—held steady.

Our results—especially rising profits—fit awkwardly with the ascendant Legal Explanations, which posit that being a public firm has become more expensive. If burdensome regulation were the driving force, *then the public firm would have become a poor place to do business*, and that should have *weakened* profits, driven down stock market value, and lessened the public firm sector’s economic weight. But it did not. Something made the public firm sector *more* valuable and *more profitable*.

It’s plausible that in the last quarter-century, the American public firm sector was transformed via three simultaneous industrial organization changes: more profit, more value, and a diminishing number. We consider explanations for this plausible package of changes in Part III.

Corporate legal analysis focuses on a single change—fewer firms. But consider the possibility that the three constitute a *single* transformation of the public firm sector. If each is part of a single process, then analysis should explain the package. The Legal Explanations cannot. Real economy, industrial organization explanations can.

True, perhaps this triumvirate of public firm transformations is severable, with each having a different cause. Perhaps the fewer firms’ aspect has nothing to do with rising profits and rising value. *If* severable, and only if severable, the Legal Hypotheses potentially have good explanatory power. But we show that even here Real Economy forces could explain the diminishing number of firms alone, and the Legal Explanations have trouble explaining the disappearance of more than 3,000 firms, although our current understandings and evidence do not allow a sharp weighing of each explanation’s impact.

Our main purpose in this Article is to show in Part II that by measures other than a raw count, public firms’ economic weight has not lightened since 1996. Corporate and securities market regulators should accordingly reassess their basic views of public firm shrinkage. The fact of shrinkage should not in itself lead to the conclusion that we have grossly misdirected corporate regulation because misdirected regulation must explain not just the disappearance of, say, the 1,000 smallest public firms of 1996, but must explain the disappearance of nearly half of all 1996 public firms, meaning that the disappearance explanations must be broad enough to encompass the median-sized public firm of 1996. Our secondary purpose is to outline a research agenda of how real economy forces can explain the package of public firm changes we document in Part II and how, in Part III, the current evidence supports these Real Economy Explanations. And then in Part IV, we consider ramifications for SEC policy thinking.

² See *infra* Part III.E.ii.

SEC policymakers seem to measure the strength of the public firm sector by the number of firms and worry about the downward trend. But when assessing whether regulation is too burdensome, policymakers should focus not just on their number but on the metrics we bring forward—profitability, stock market value, revenues, investment, and employment. And if the reason for the declining number of public firms mainly comes from the Real Economy Explanations, then the SEC has less reason to reduce protective regulation for public firm investors. Currently, policymakers infer from the diminishing number of firms that their regulation is too tight. But if instead an I.O. Explanation is the dominant force, that inference about the impact of legal regulation is incorrect, or weak. Securities regulation might be well-calibrated, and not too tight. Or ill-considered here and there, but not a particularly big over-regulation problem.

* * *

We then conclude. Corporate law policymakers and analysts have been apprehensive for years about the declining number of public firms. But rather than the sector weakening, it is stronger, or no less strong, by every measure other than the number of firm. It's strength may concern lawmakers rather than its shrinking number. And it's natural for lawyers to emphasize legal explanations for phenomena. While corporate regulation surely plays a role, particularly for smaller firms, Industrial Organization ideas explain important trends in public firms, particularly for growing, more profitable public firms, that the Legal Explanations cannot explain. I.O. ideas fit better with the fact that the number of public firms halved since their 1996 peak, while their profits, value, revenues, and investment did not halve—and in the case of aggregate profits, rose dramatically. The public firm sector is not becoming a scorned place to do business—it is growing. It's achieving this growth with bigger, more profitable firms in more concentrated industries.

I. THE PROBLEM TO EXPLAIN: THE DECLINING NUMBER OF PUBLIC FIRMS

A. Half as Many Public Firms By Year-End 2022

The number of public firms halved in the past 25 years. During the same time, the number of initial public offerings—when previously privately-owned firms sell their stock to distant, public stockholders—also declined.

These are worrisome developments for the American economy, according to many. A narrative has developed, with representative analyses pleading for a “wake-up call for America” because of a “decimation of the U.S. capital markets structure [and a] demise of the IPO market,” that led to “the systemic decline in the number of publicly listed companies.”³ Jamie Dimon's 2023 JPMorgan Chase letter to shareholders

³ David Weild & Edward Kim, *Market Structure Is Causing the IPO Crisis—and More* (Grant Thornton, Capital Markets Series, June 2010), <https://static1.squarespace.com/static/61677f793dad743517bba88e/t/61ba601e1bb50267ce96348d/1639604255483/Market-structure-is-causing-the-IPO-crisis-June-2010.pdf> (report

laments “shrinking public markets” and the “*diminishing role of public companies*. . . . From their peak in 1996 at 7,300, U.S. public companies now total 4,300. . . . The trend is serious. . . . Is this the outcome we want?”⁴ Those who lament the decline in number often bring forward over-regulation as a central cause, as did Mr. Dimon.

The stock market has long been a central engine of American economic development and opportunity because it “encourages entrepreneurship, facilitates growth, creates jobs, and fosters innovation, while providing attractive opportunities for investors to increase their wealth and mitigate risk,” says one SEC commissioner.⁵ By facilitating healthy risk-taking, says another, it “allows more creativity ... [and] brings a dynamism to our economy that’s necessary for the economic growth we have enjoyed over much of the course of our history.”⁶ It does this by allowing investors to diversify their investments among many firms, which allows risky firms to move forward because no investor has too much wealth tied up in a single firm. Lastly, because the average middle-class person with some savings can invest in the stock market—directly or through a pension plan or mutual fund—the public stock market allows these Main Street investors to share in the economy’s growth.⁷ More Americans sense that they have a stake in America’s business via the stock they own, historically making for more political and social stability. If the public firm has become an endangered economic species—as many say it has—these advantages diminish. Or disappear.

Is the public firm an endangered species? Figures 1 and 2 suggest that it is.

1. Sharply declining number of public firms. Figure 1 shows the sharp decline in the number of public firms, from 7,000 in 1996 to about half that number by 2022.⁸ That decline leveled off by 2013.

based on discussions with “current and former SEC senior staffers, investment bank executives and the venture capital community,” with the report’s work said to have “conclusions [that] gained favor with the financial news media and with members of Congress”). Or consider mainstream media: “The publicly traded company is disappearing,” boldly begins an October 2023 article in *The Atlantic*. Rogé Karma, *The Secretive Industry Devouring the U.S. Economy*, *THE ATLANTIC*, Oct. 30, 2023.

⁴ See *supra* note 1 (emphasis supplied). On narratives, their resistance to data checks, and their potential to distort policymaking, see Mark J. Roe & Roy Shapira, *The Power of the Narrative in Corporate Lawmaking*, 11 HARV. BUS. L. REV. 233 (2021); ROBERT J. SHILLER, NARRATIVE ECONOMICS: HOW STORIES GO VIAL AND DRIVE MAJOR ECONOMIC EVENTS (2019). Cf. DANIEL KAHNEMAN, THINKING, FAST AND SLOW 59–62 (2011).

⁵ Michael S. Piwowar, Comm’r, SEC, Opening Remarks at SEC-NYU Dialogue on Securities Market Regulation: Reviving the U.S. IPO Market (May 10, 2017), <https://www.sec.gov/news/speech/opening-remarks-sec-nyu-dialogue-securities-market-regulation-reviving-us-ipo-market>.

⁶ Hester M. Peirce, Comm’r, SEC, Remarks at the 38th Annual Northwest Securities Institute CLE at the Washington State Bar Association: Tossing Fish and Catching Capital (May 4, 2018), <https://www.sec.gov/news/speech/speech-peirce-050418>.

⁷ Elad L. Roisman, Comm’r, SEC, Remarks at SEC Speaks: Encouraging Smaller Entrants to Our Capital Markets (Apr. 8, 2019), <https://www.sec.gov/news/speech/speech-roisman-040819>; Jay Clayton, Chair, SEC, Remarks at the Economic Club of New York (July 12, 2017), <https://www.sec.gov/news/speech/remarks-economic-club-new-york>. Below we skeptically reference a popular complaint about the decline in the number of public companies, namely that, it is said, the decline weakens the public’s investment opportunities. See *infra* Part III.E.

⁸ Scaling that multi-decade decline to America’s growing population or our growing economy would render the decline even steeper.

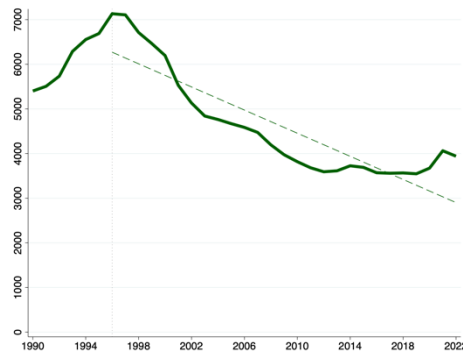


Figure 1. Declining number of public firms, 1990–2022⁹

The number of public firms dropped from a 1996 high of more than 7,000 to fewer than 4,000 by 2013 and stayed at that lower level, with a slight bend upward after 2019. The trendline from the 1996 peak shows a halving of the number of public firms by 2022.

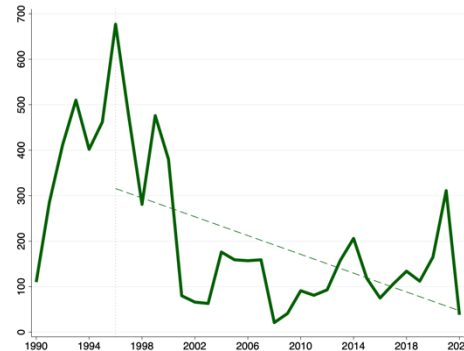


Figure 2. Declining number of IPOs, 1990–2022¹⁰

The number of private firms making an initial public offering of their stock dropped from a 1996 high of about 700. Figure 2 shows the trendline for IPOs from 1996 onward, roughly steadying at a lower level since 2001.

2. The dearth of IPOs. The number of initial public offerings of stock by private companies also plummeted from its 1996 high, and our Figure 2 replicates this common finding.

Some public companies fail, go bankrupt, shrink, remove themselves from the stock market, or are acquired. But then other, fresher, newer private companies grow, sell their stock to raise capital, and join the roster of public companies. Amazon was a private company for several years, went public in 1997, and its stock market capitalization now makes it one of the largest American companies.¹¹

The number of IPOs declined in the past quarter-century, albeit with a burst in 2021 that either reversed the trend or was a temporary respite (because IPOs nearly disappeared in 2022).¹²

We thus confirm the trends shown before in academic and policy work: a declining number of public firms and IPOs. We next look at the dominant explanations.

⁹ Our sample consists of public firms with ordinary common shares included in both Compustat, provided by S&P GLOBAL MARKET INTELLIGENCE, and CRSP, provided by the Center for Research in Security Prices. ADRs (American Deposit Receipts, via which foreign stock trades in the U.S.), real estate investment trusts, closed-end funds, trusts, and shares of beneficial interest are excluded from our analyses throughout. As is standard in finance, the sample aggregates listings on the New York Stock Exchange, the American Stock Exchange, and NASDAQ. It doesn't include the small handful of companies (about 1% of the total) that trade on regional exchanges.

¹⁰ The IPO data comes from Jay P. Ritter's IPO database at <https://site.warrington.ufl.edu/ritter/ipo-data/>.

¹¹ I.e., Amazon has issued 10.4 billion shares of stock. The stock traded at \$185 per share at the close of trading on June 6, 2024. Amazon's stock market capitalization was 10.4 billion x \$185, or \$1.9 trillion.

¹² Jay R. Ritter, *Initial Public Offerings: Updated Statistics*, June 30, 2022, <https://site.warrington.ufl.edu/ritter/files/IPO-Statistics.pdf>; Corrie Driebusch, *IPO Market Faces Worst Year in Two Decades*, WALL ST. J., Aug. 22, 2022.

B. Ascendant Explanations: Corporate Securities Law and the State of the Stock Market

Two regulatory explanations for the declining number of public firms dominate. One is that going public is too costly, especially after Sarbanes-Oxley's intense regulatory additions in 2002. These costs are said to deter younger, smaller firms from going public. Influential financial media excoriate Sarbanes-Oxley and its purportedly negative impact on the public firm.¹³

The second corporate securities law explanation is that the SEC has eased burdens on private capital-raising so that private firms now can raise capital almost as easily as small public firms without the burdens of being public. As the stream of small newly-public companies diminishes, the implication seems to be, the public sector accordingly shrinks.

In addition, there is a finance explanation for the level of IPOs: when stock prices are high relative to other financing channels, private stockholders sell and thereby swell the number of public firms; when stock prices are low, they bide their time, and the number of public firms stagnates.

Discussion follows.

1. Over-regulation, especially via Sarbanes-Oxley. In the twenty-first century's early years, the over-regulation thesis was widely voiced, and the thesis prominently persists.¹⁴

Going public is not cheap. Paying professionals to assemble regulator-required financial statements every three months is only the beginning. The securities laws' mandated disclosure for public companies induces firms to signal to private competitors how valuable the public firm's technologies and strategies are. Private (and public) competitors can imitate profitable strategies. And securities and corporate lawsuits are common for public companies. A former SEC commissioner contends that "today such litigation is less of a risk *and more of a certainty*.... [S]hareholder litigation surrounding

¹³ John Berlau & Josh Rutzick, *The 20-Year Experiment Holding America Back*, WALL ST. J., July 29, 2022, www.wsj.com/articles/the-20-year-experiment-holding-the-u-s-back-sarbanes-oxley-corporate-reform-bush-entrepreneurs-investors-fraud-business-11659044813?mod=opinion_lead_pos5. See also Stephen M. Bainbridge, *Sarbanes-Oxley § 404 at Twenty*, 78 BUS. LAW. 647 (2023).

This view of Sarbanes-Oxley and over-regulation has been countered. Brian R. Cheffins, *Rumours of the Death of the American Public Company are Greatly Exaggerated*, 40 COMPANY LAW 1, 6 (2019); John C. Coates, IV, *The Promise of Sarbanes-Oxley*, 21 J. ECON. PERSPS. 91 (2007); Christian Leuz, *Was the Sarbanes-Oxley Act of 2002 Really this Costly? A Discussion of Evidence from Event Returns and Going-Private Decisions*, 44 J. ACCT. & ECON. 146 (2007).

¹⁴ See, e.g., William J. Carney, *The Costs of Being Public After Sarbanes-Oxley: The Irony of "Going Private,"* 55 EMORY L.J. 141 (2006); Ellen Engel, Rachel M. Hayes & Xue Wang, *The Sarbanes-Oxley Act and Firms' Going-Private Decisions*, 44 J. ACCT. & ECON. 116 (2007); Leslie B. Fletcher & Morgan P. Miles, *The Law of Unintended Consequences: The Effects of the Sarbanes-Oxley Act on Venture Funding of Smaller Enterprises*, 8 J. PRIVATE EQUITY 70 (2004); Dale A. Oesterle, *The High Cost of IPOs Depresses Venture Capital in the United States*, 1 ENTREPRENEURIAL BUS. L.J. 369, 370 (2006); Stephen J. Redner, *Thinking of Going Public? Think Twice, Then Read the Sarbanes-Oxley Act of 2002*, 6 J. SMALL & EMERGING BUS. L. 521, 523-27 (2002); Ivy Xiyang Zhang, *Economic Consequences of the Sarbanes-Oxley Act of 2002*, 44 J. ACCT & ECON. 74 (2007). But see Paul Rose & Steven Davidoff Solomon, *Where Have All the IPOs Gone? The Hard Life of the Small IPO*, 6 HARV. BUS. L. REV. 83 (2016). British analysts worry its "stock market has been 'fading away' . . ." See Brian R. Cheffins & Bobby V. Reddy, *Will Listing Rule Reform Deliver Strong Public Markets for the UK?* 86 MODERN L. REV. 176 (2023).

initial public offerings has become even more top of mind for companies considering going public.”¹⁵ Senior management fears disruptive litigation, and those fears alter their strategic vision, often for the worse.

Better, in this over-regulation view, to stay private, if possible.

The over-regulation thesis was prominent in early policy analyses of the Sarbanes-Oxley Act of 2002. With that statute, Congress responded to scandals at Enron and WorldCom with new rules for public companies. Among the most discussed was the costly accounting control systems the law required, even when the fraud risks were modest. Nonpublic firms did not need to incur these costs.¹⁶

But the broad trend in the number of firms in Figure 1 fits the over-regulation thesis awkwardly. The number of firms halved since their 1996 high-water mark and stayed roughly flat since 2013, but these two breakpoints do not correspond to rising or declining securities regulation. The major corporate regulatory shock of recent decades was the 2002 Sarbanes-Oxley Act. But the number of public firms was sharply declining *before* then, and the number of IPOs *rose* in the few years after the Act’s 2002 passage, as Figure 2 shows. This timing does not support the over-regulation thesis. It supports commentators who analyzed that Act as unlikely to have had the severely negative impact ascribed in the media and some academic circles.¹⁷

2. *Relaxed regulation of private capital flows.* Meanwhile, astute analysis showed that paths to capital raising that were once closed for private companies opened up.¹⁸ Private firms needing capital no longer have to raise that capital in public stock markets.

The Securities and Exchange Commission requires a firm to register as a public firm once it reaches a threshold number of stockholders. In 1982, the SEC eased that threshold.¹⁹ Congress and the SEC expanded this category of private firms that need

¹⁵ Roisman, *supra* note 7 (emphasis added).

¹⁶ See sources cited *supra* note 14. Entrepreneurs could prefer to keep their businesses private for reasons apart from regulation. Public company executives are subject to financial, social, and psychological pressures that private company executives can avoid. Private company executives often have more autonomy and privacy. Conversely, some executives, like Elon Musk, may prefer the notoriety from running a public company.

¹⁷ Cf. sources cited *supra* in the second paragraph of note 13. True, over-regulation adherents could ascribe the decline in the number of firms to a costly pre-Sarbanes *baseline* that dates back to the 1930s’ passage of the two major securities acts. Sarbanes-Oxley, in this view, raised the baseline further. We do not seek to counter this broader view. Instead we seek to show that (i) descriptively the public firm sector has as much weight in 2022 as it did in 1996 by the measures we assess, (ii) a syllogism that the halving implies over-regulation is weak, or false, and (iii) the trends surrounding the change in the numbers of firms, the numbers of IPOs, and the level of profitability do not bolster the over-regulation thesis. The public firm sector does not seem weaker than it was in 1996.

¹⁸ John C. Coffee, *Gone with the Wind: Small IPOs, the JOBS Act, and Reality*, CLS Blue Sky Blog, Feb. 1, 2013, <https://clsbluesky.law.columbia.edu/2013/02/01/gone-with-the-wind-small-ipos-the-jobs-act-and-reality/>; Cheffins, *supra* note 13, at 14; Elisabeth de Fontenay, *The Deregulation of Private Capital and the Decline of the Public Company*, 68 HASTINGS L.J. 445 (2017); George S. Georgiev, *The Breakdown of the Public-Private Divide in Securities Law: Causes, Consequences, and Reforms*, 18 N.Y.U. J.L. & BUS. 221, 224–25, 264 (2021) (deregulatory cascade); COMMITTEE ON CAPITAL MARKETS REGULATION, INTERIM REPORT (2006). See *supra* sources cited in note 14.

¹⁹ Regulation D, Rule 504, 17 C.F.R. § 230.504. However, we are unaware of any tallying of how much money was freed for investment by this loosening. Much of the private investment flow still comes from institutional investors, we understand, and they were exempt before the rules changed.

not register further.²⁰ Proponents of the importance of this deregulation thesis see private firms as now better able to raise capital while remaining private. So these private firms stay private, to avoid the regulatory costs of being a public firm.

Collectively, we'll call these two regulatory ideas the corporate and securities "Legal Explanations." In the past decade, 13 of the 17 SEC commissioners spoke on the declining number of public firms.²¹ All who spoke advanced one of the Legal Explanations, with about half of them finding the first one—over-regulation of public firms—to be important, while about half found deregulation of private equity flows central.²² Republican commissioners emphasize the regulatory burdens on the public firm. Democratic commissioners emphasize loosened regulation on private firms.²³ While the two seem at loggerheads, they have much in common. Both put corporate securities law front and center as explaining the declining number of public firms.

3. *How high is the stock market?* An additional explanation—popular in financial circles—is that more firms go public when the stock market's price/earnings ratio is high, such that the stock market is the least expensive funding source. When the stock market is a better source of funding—because investors have pushed up the price of stock while borrowing is comparatively expensive—owners of private firms sell stock into the public stock market. When the stock market is low, owners do not want to give buyers a bargain. They stay private.

Sometimes the entire stock market is attractive, sometimes a particular industry is. "IPOs come to market when their industry is 'overvalued' relative to the rest of the

²⁰ National Securities Markets Improvement Act of 1996, 1996 Enacted H.R. 3005, 104 Enacted H.R. 3005, 110 Stat. 3416; Michael Ewens & Joan Farre-Mensa, *The Deregulation of the Private Equity Markets and the Decline in IPOs*, 33 REV. FIN. STUD. 5463 (2020) (attributing a central role to the decline in IPOs to the National Securities Markets Improvement Act of 1996—a major deregulation of private stock investments). Jumpstart Our Business Startups Act ("JOBS Act"), Pub. L. No. 112-106, § 501; Fixing America's Surface Transportation Act ("FAST Act"), Pub. L. No. 114-94.

The better flow of private capital to private firms mitigates the economy-wide costs of burdensome public company regulation. Even if smaller public firms were burdened—a contested proposition—private firms can now step in to take their place.

²¹ These viewpoints are detailed in Appendix Table 1A.

²² Only one commissioner pointed to an I.O. Hypothesis as important (although presumably others considered that possibility). Allison Herren Lee, Comm'r, SEC, Remarks at The SEC Speaks in 2020: Investing in the Public Option: Promoting Growth in Our Public Markets (Oct. 8, 2020), <https://www.sec.gov/news/speech/lee-investing-public-option-sec-speaks-100820> ("Some research suggests that small companies may find it more beneficial to be acquired by a larger company in the same industry rather than going public; the resulting economies of scale and scope may produce greater returns than the company could expect to generate organically on its own.").

Commissioner Robert Jackson pointed to the organization of the IPO industry. Firms pay a fixed rate when going public, typically 7% of the value of the stock sold. This fee applies only to the shares being offered and is less than the fee paid to sell the entire firm. Robert J. Jackson, Jr., Comm'r, SEC, Remarks at the Greater Cleveland Middle-Market Forum: The Middle-Market IPO Tax (Apr. 25, 2018), <https://www.sec.gov/news/speech/jackson-middle-market-ipo-tax>; Hsuan-Chi Chen & Jay R. Ritter, *The Seven Percent Solution*, 55 J. FIN. 1105 (2000). A related idea is that with the concentration of investment in big investment houses—BlackRock, Vanguard, Fidelity, and State Street—the investment houses' own economies of scale demand that the absolute size of their investments be such a large portion of the stock of a small, just-recently public firm, that the investment houses do not bother investing in small stocks. Marshall Lux & Jack Pead, *Hunting High and Low: The Decline of the Small IPO and What to Do About It* (Harv. Kennedy School M-RCBG Associate Working Paper Series No. 86, Apr. 2018), hks.harvard.edu/sites/default/files/centers/mrcbg/working_papers/86_final.pdf.

²³ Appendix Table 1A.

market.”²⁴ Analysts say that when the stock market appears preferable to private investors, a window of opportunity opens to sell stock to the public. Those sales then swell the number of public companies.²⁵ When the stock market is less attractive, fewer private firms go public, more stay private, and the number of public companies declines.

When is the stock market more attractive to owners than private investment, bank borrowing, or the bond market? Investor sentiment that drives a bull market values stock excessively. Owners who perceive a window of opportunity to sell stock at favorable prices will often go public, even if their firm needs no new financing.²⁶

This Finance Explanation, however, cannot explain the quarter-century decline in the number of public firms well. From 1996 onward, the stock market’s valuation of earnings *rose* overall (although with ups and downs).²⁷ That overall rise would, if it were the only factor in play, have induced *more* public firms. But in 1996, the number of U.S. public firms started its quarter-century decline.

The financial valuation trends of the past quarter-century would, if they were the dominant influence, have pushed *more* firms to go public, not fewer. Hence, we put the Finance Explanation aside in our investigation. Something offsets the upward push of the Finance Explanation.²⁸

II. BUT THE PUBLIC FIRM SECTOR HAS NOT HALVED IN PROFITABILITY OR SIZE

To recap: In Part I, we confirmed the conventional wisdom that the number of public firms fell precipitously—declining by nearly half in the roughly 25 years since 1996. And we recapitulated the conventional explanations: burdensome regulation made it too costly for many firms to go public, and staying private no longer means

²⁴ Raghuram Rajan & Henri Servaes, *The Effect of Market Conditions on Initial Public Offerings*, in VENTURE CAPITAL CONTRACTING AND THE VALUATION OF HIGH-TECH FIRMS 437, 456 (Joseph McCahery & Luc Renneboog, eds. 2003) (more IPOs when the already-public firms in that industry have high market-to-book multiples); Tim Loughran & Jay R. Ritter, *New Issues Puzzle*, 50 J. FIN. 23, 46–47 (1995) (IPO volume is highest near peaks in market price).

²⁵ James C. Brau, *Why Do Firms Go Public?* in THE OXFORD HANDBOOK OF ENTREPRENEURIAL FINANCE 477–78 (Douglas Cumming, ed., 2012); Roger G. Ibbotson & Jeffrey F. Jaffe, *Hot Issues’ Market*, 30 J. FIN. 1027, 1027 (1975) (more firms go public when there’s a “hot issue” market); Scott Orn, *What Is the IPO Window?*, Kruze Consulting (Feb. 23, 2022), <https://kruzeconsulting.com/blog/ipo-window/> (“If the stock market goes up, and people have money to invest and a greater appetite for risk, the IPO window is open.”); Josh Lerner, *Venture Capitalists and the Decision to Go Public*, 35 J. FIN. ECON. 293, 300–04 (1994) (venture capitalists “take companies public when their valuations are at their absolute . . . peak”); Jay R. Ritter, *The Long-Run Performance of Initial Public Offerings*, 46 J. FIN. 3, 19–20 (1991) (IPOs are overpriced because, when public stock market investors are overly optimistic, private firms go public to take advantage of the high-price opportunity).

²⁶ See Rajan & Servaes, *supra* note 24, at 454 (“firm managers and investment bankers will bring IPOs to market when sentiment is high”). In a perfectly efficient financial market, we note, any advantage in one channel should lead the other channels to adjust quickly.

²⁷ Shiller PE Ratio, <https://www.multpl.com/shiller-pe> (last accessed Sept. 4, 2022).

²⁸ The Finance Explanation is potentially still relevant: If something else powerfully pushed the number of firms *down*, then the rising valuation of earnings could have offset some of the powerful downward pressure. But the Finance Explanation cannot explain the *decline* in the number of firms. Something else must be in play.

poor access to capital. An easy potential implication is that the public firm sector is becoming less important, or has even been eclipsed.

In this Part II, we challenge the concept that burdens are making the public firm sector smaller than it was in 1996. The public firm sector did not become economically smaller since its 1996 peak in numbers. Its robust business and economic strength is seen in public firms' burgeoning profits in the quarter century since 1996. Its strength can also be seen in its strong stock market capitalization, which roughly doubled relative to the economy, as well as in its revenue, investment, and employment levels—which all are roughly keeping pace with the economy's growth.

A. Public Firms Are Bigger, Fewer, and Growing in Economic Power

The sharp rise of the public firm sector's net income since 1996 fits badly with the conception that the American public firm is in decline, post-1996. Net income rose from \$366 billion in 1996 to \$1.6 trillion in 2022. Figure 3 illustrates.

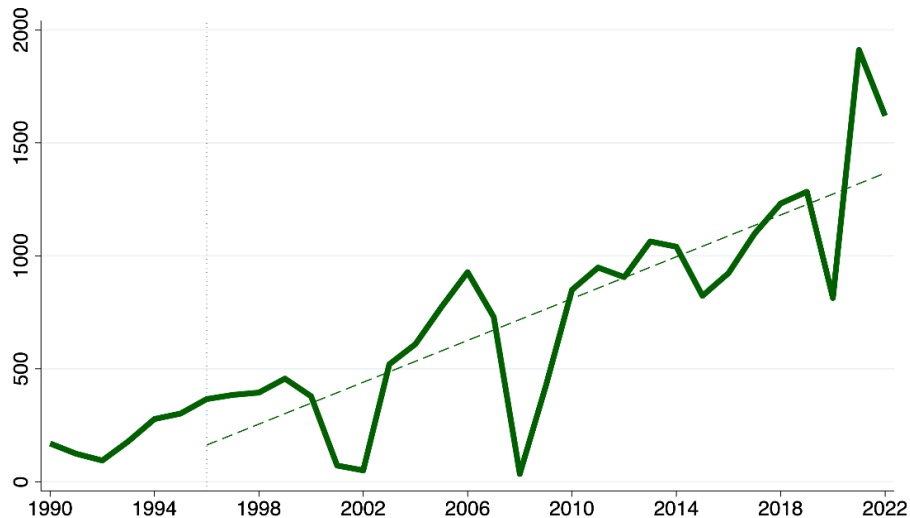


Figure 3. Rising profitability of the American public firm sector, 1990–2022.²⁹

This figure shows the several-fold rise in net income (in billions of US dollars) of the American public firm sector. The dashed line is the sharply rising 1996 trend-line. While the number of public firms halved (see Figure 1) and the number of IPOs declined (see Figure 2), public firms' net income rose sharply.

Conventional presentations of such economy-wide data over time scale the data to GDP. The trendline for net income scaled to GDP shows profits doubling as a share of GDP in the past quarter-century. A 2022 to 1996 comparison reveals a rise from 4.5% of GDP in 1996 to an 8.2% peak in 2021—a near doubling—and to 6.4% in 2022. Figure 4 illustrates.

²⁹ Source: S&P GLOBAL MARKET INTELLIGENCE, <http://www.compustat.com>.

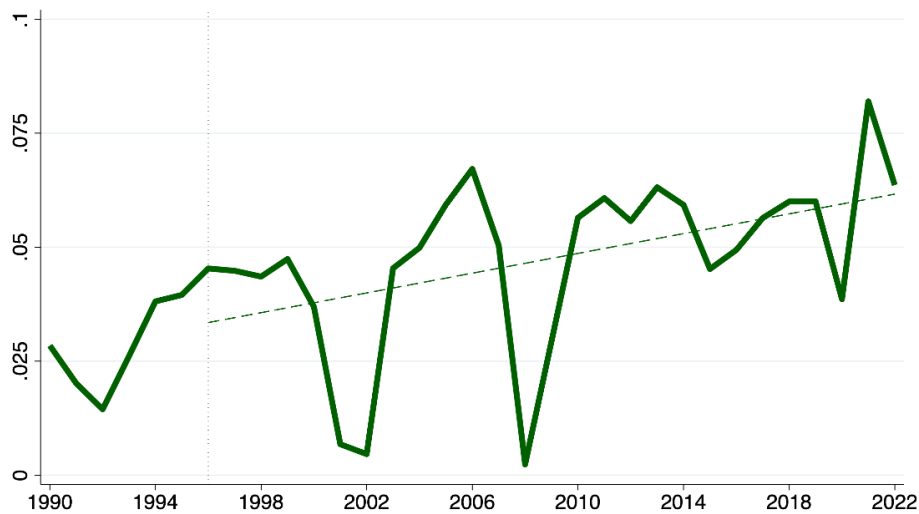


Figure 4. Rising profitability of the American public firm sector, scaled to GDP, 1990–2022.

This figure shows that public firms' net income as a proportion of GDP. The dashed line is the sharply rising 1996–2022 trendline. Public firms' net income as a proportion of GDP did not halve but rose sharply, from 4.5% of GDP in 1996 to an 8.2% peak in 2021 and to 6.4% in 2022, with the trendline showing an overall doubling since 1996.

Financial analysis often uses other profitability measures, depending on the analytic purpose. We investigate several prominent alternatives; none show a decline and nearly all sharply rise. Accounting conventions adjust income for extraordinary items and there are controversies about whether profits before or after extraordinary items are more indicative. Figure 5 illustrates the rising trend for net income before extraordinary items. More centrally, a decline in the corporate tax, as the United States experienced after 2017, could push up post-tax profitability and pull up the Figure 4 trendline. But taxes fail to account for the sharp rise in profit, as Figure 6 demonstrates: profits *before* tax expense for American public firms rose. The rise is more shallow than some other profit measures, but it is still substantial and far from the slope of the halving of the number of public firms. Interest rates have been low in the United States since 2009 and indeed the trend for pre-interest income is flatter relative to GDP than the others; but it too did not halve like the number of firms. Even it stayed steady.³⁰

³⁰ More specifically, earnings before interest and taxes relative to GDP are flat since 1996. But even here the full story might be a substantial rise, if the start-point were 1990. I.e., EBIT/GDP rose sharply starting in 1990, before the 1996 peak in the number of firms.

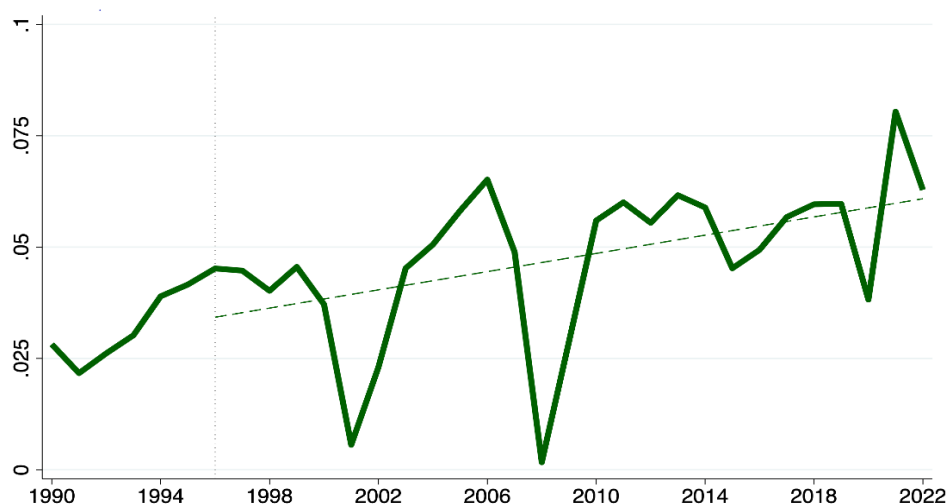


Figure 5. Rising profitability before extraordinary items, scaled to GDP, 1990–2022.

This figure shows that public firm profits before the inclusion of extraordinary items, as a proportion of GDP, rose substantially from 1996 to 2022.

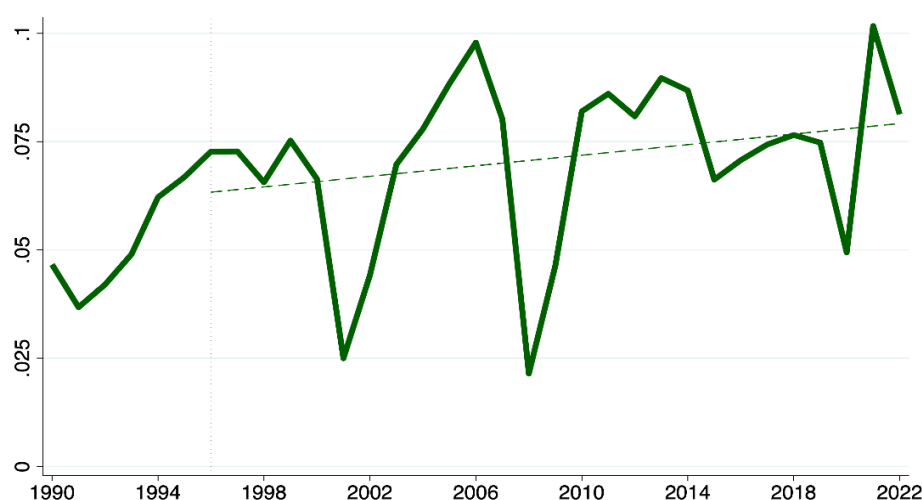


Figure 6. Rising before-tax profitability, scaled to GDP, 1990–2022.

This figure shows that public firm pre-tax profits, as a proportion of GDP, rose substantially from 1996 to 2022, even as the number of public firms halved. Despite the drop in corporate taxes, which boosted post-tax profitability, the trend since the peak in the number of public firms is still sharply up.

Some analysts prefer a measure of economic profits that accounts for investors' opportunity cost of capital. This measure, sometimes termed "abnormal earnings" or "residual income," reflects the economic rent that firms command and tends to increase with industry concentration, barriers of entry, market share, and firm size.³¹ For example, if the public firm sector earned \$1 trillion in one year and then \$1.5 trillion in

³¹ Qiang Cheng, *What Determines Residual Income?* ACCT. REV. 80 No. 1, 85–112 (2005).

a later year, the comparison would have profits rising by 50%. If stock market investors had \$20 trillion of invested capital in each year, and the benchmark opportunity cost of capital was 5% in the first year and 7.5% in the later year—which can occur either because interest rates or equity risk premiums have risen—then economic profit would have stayed steady at \$0 trillion.³² If the benchmark opportunity cost of capital were 5% in both years, then economic profits would have increased from \$0 trillion to \$0.5 trillion.³³

In Figure 7, economic profit rose sharply while the number of firms plummeted.³⁴

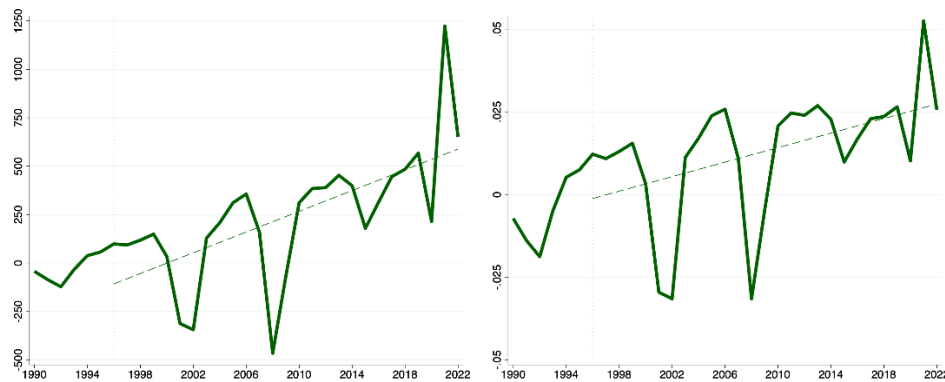


Figure 7. Rising economic profits, 1990–2022.

This figure recalculates public firms’ profitability to account for the baseline cost of capital. In the common configuration of economic profit (sometimes called abnormal earnings or residual income), the measure accounts for the fact that investors have alternative opportunities—such as low-risk U.S. Treasury bonds—for their savings. The economic profit thus deducts from net income an interest component (equivalent to the yield on a 10-year Treasury bond and a risk premium for investing in stock, of 5.5% per annum. The left figure is public firms’ total raw economic earnings; the right figure charts economic earnings scaled to GDP. Since these economic (or residual, or excess) earnings were near zero in 1996, calculating their multiple for 2022 is not meaningful. Suffice it to say that they rose sharply.

³² In the first year, economic profits are $\$1 \text{ trillion} - [\$20 \text{ trillion} * 5\%] = \0 ; in the second year, economic profits are $\$1.5 \text{ trillion} - [\$20 \text{ trillion} * 7.5\%] = \0 trillion . Thus, there is no increase in economic profits.

³³ In the first year, economic profits are $\$1 \text{ trillion} - [\$20 \text{ trillion} * 5\%] = \0 trillion ; in the second year, economic profits are $\$1.5 \text{ trillion} - [\$20 \text{ trillion} * 5\%] = \0.5 trillion . Thus, economic profits increased by \$0.5 trillion.

³⁴ Our measure of economic profit is computed as net income minus the opportunity cost of capital. We compute the opportunity cost of capital as the beginning-of-year book value of equity times the cost of equity, which is computed by implementing the Capital Asset Pricing Model. Specifically, each year’s cost of equity capital is computed by summing the ten-year treasury yield, obtained from the St. Louis Fed’s FRED Economic Database (<https://fred.stlouisfed.org/series/DGS10>), and an equity risk premium of 5.5%. Our choices are guided by common practice in the estimation of required returns on stock markets. See, e.g., Pablo Fernandez, Sophia Banuls, and Pablo Fernandez Acin. Survey: Market Risk Premium and Risk-Free Rate used for 88 Countries in 2021 (IESE Business School Working Paper, 2021), <https://papers.ssrn.com/abstract=3861152>.

B. Public Firms' Rising Stock Market Capitalization

Public firms' aggregate *value* rose in the past quarter-century, a fact that fits badly with a conception that the American public firm is in decline. Margaret Blair, Brian Cheffins, and George Georgiev make similar observations about stock market value.³⁵

In 1996, the total value of U.S. stock market capitalization was \$7.7 trillion, or about half of that year's GDP. By 2022, the total capitalization had risen to more than \$38 trillion, much more than 2022 GDP. Public firms are by this measure *more* important to the economy today than in 1996. Figure 8 illustrates.

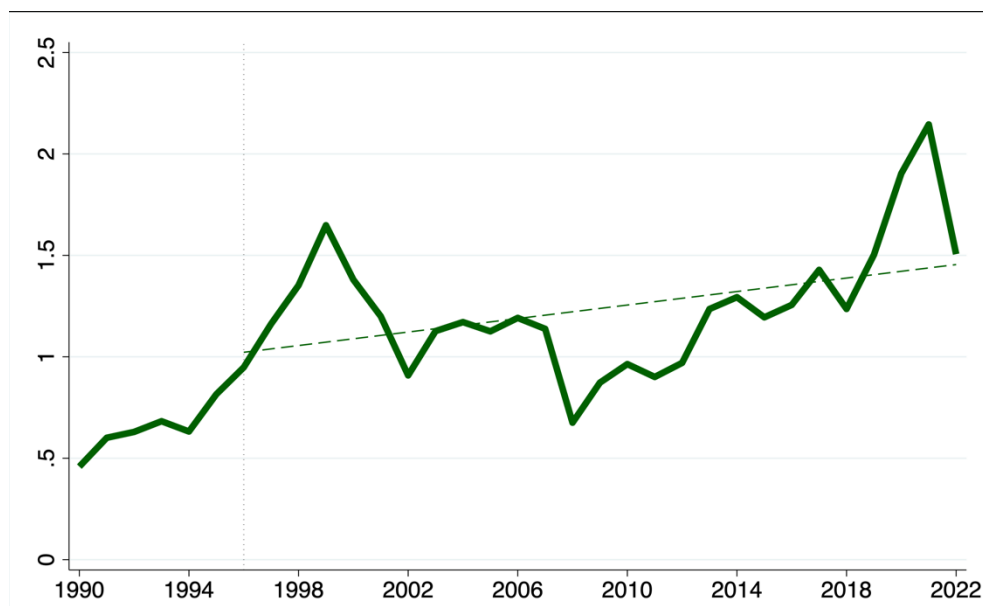


Figure 8. Rising total stock market capitalization, scaled to GDP, 1990–2022³⁶

³⁵ Cf. Cheffins, *supra* note 13, at 6, 22–24; Georgiev, *supra* note 18. See also Alperen A. Gözlüçöl, Julian Greth & Tobias H. Tröger, *The Oscillating Domains of Public and Private Markets* (working paper, 2022); Vijay Govindarajan, Shivaram Rajgopal, Anup Srivastava & Luminia Enache, *Why We Shouldn't Worry About the Declining Number of Public Companies*, HARV. BUS. REV. (Aug. 27, 2018). Margaret Blair studies the largest 200 public firms, focusing on the stability of their assets, revenue, and market value, showing that despite the vicissitudes of the twentieth century—early trust-busting, roaring Twenties, a Great Depression, World War II, and a postwar boom—the largest firms played a consistently important role in the economy through the 1980s. Margaret M. Blair, *Are Publicly Traded Corporations Disappearing?* 105 CORNELL L. REV. 641, 644–53 (2020).

We add to prior work that highlights rising stock market value by highlighting the sharply rising profitability of the public firm sector, thereby laying a foundation for the industrial organization hypotheses of Part II. We focus on what happened in the quarter-century since the 1996 peak in the number of public firms, conjecturing that there was an interconnected triad of changes in the quarter-century after the peak: (i) net income doubled (Figure 4), (ii) stock market value doubled (Figure 8), and (iii) the scale of the public firm rose greatly or held steady by other measures. First, that contradicts the possible implication of fewer firms meaning a weakened public firm sector. Second, corporate securities regulation cannot, we assert, explain that package. We focus on the entire public firm sector.

³⁶ Source: S&P GLOBAL MARKET INTELLIGENCE, <http://www.compustat.com> [https://perma.cc/8WM8-MRHT].

This figure shows the total value of the stock market steadily rising in the past three decades as a proportion of GDP. The value of each company is obtained by multiplying the trading value of a share of stock by the number of the company's shares. Total stock market capitalization is obtained by adding the value of each company. The trendline shows the rise since 1996.

Stock market capitalization is an imprecise measure, however. In principle it's investors' estimate of public companies' *future* cash paid to stockholders (via dividends or proceeds upon a sale of the company) and, hence, in concept it's the market's projection of where the public sector is *going*. (The fact that it nearly doubled suggests that investors do not see securities regulation as so burdensome as to prevent profits and cash flow in the sector from rising even more.) The profit measures we examine reveal where the public sector *has been*, based on what actually happened to firms' profit during the 1996–2022 period. Moreover, if interest rates fall, the stock market usually rises; and interest rates fell in the decade after the 2009 financial crisis and only recently began to rise. Hence, the profitability measures we emphasize are stronger measures of change in the quarter-century after the 1996 eak.

Other measures beyond profit reflect public firms' importance—revenues, investment, employment. Do their quarter-century trends confirm or undercut the sharp rise in profitability in Figures 3 through 7? We examine these measures next.

C. Public Firms' Revenues, Investment, and Employment, 1996-2022: All Are Steady

Consider investment levels. A worry in recent years has been that public firms are investing less than before.³⁷ If public firms are becoming fewer, then those fewer firms might invest less, making them less important to the country's economic future.

Investment is more than buying hard assets—equipment, inventory, and factories. It includes spending on research and development that produces know-how. Figure 9 measures public firms' spending on both hard assets and R&D as a proportion of GDP. (Other intangible investments—like product brands—are harder to measure; hence, our measure is a lower bound for full economic investment.) In 1996 investment in hard assets and R&D was 6.8% of that year's GDP. If declining investment tracked the declining number of firms, public firm investment would have been half that, i.e., 3.4% of GDP by 2022. But that's not what happened. The 25-year trend line slopes downward only slightly.³⁸ Actual investment was higher at the end than it was in 1996, at just over 7% of GDP in 2022, even as the number of firms plummeted.

³⁷ THOMAS PHILIPPON, *THE GREAT REVERSAL: HOW AMERICA GAVE UP ON FREE MARKETS* 63 (2019); Fangjian Fu et al., *Why Do U.S. Firms Invest Less Over Time?* China Int'l Conference Fin. 1 (2015).

³⁸ From the peak in the number of firms in 1996, investment was approximately flat, slipping from 6.86% of GDP to 6.1% of GDP. We also checked the trend for other measures of investment (capital spending alone, and capital spending with R&D and with selling, general, and administrative expenses). The trends were the same.

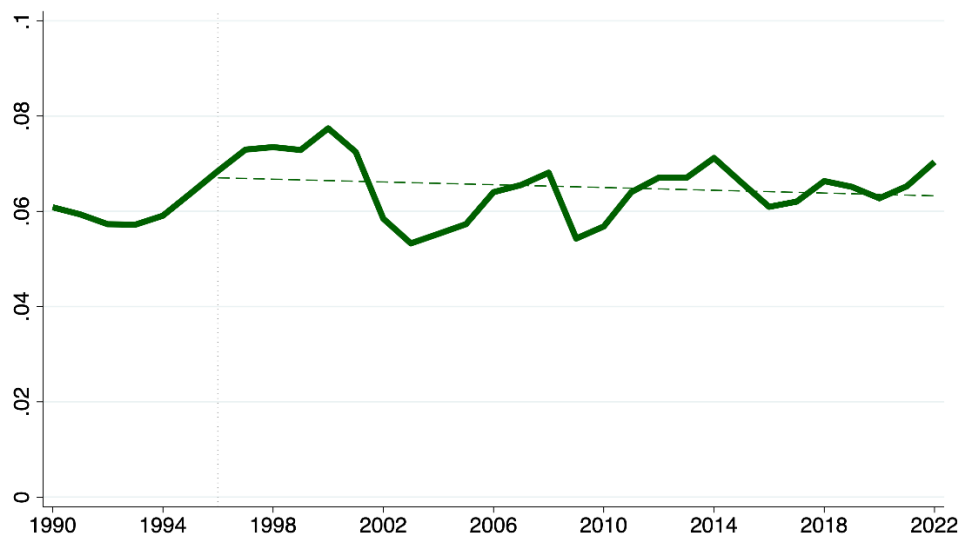


Figure 9. Steady public firm investment (capital expenditure and R&D) as a proportion of GDP, 1996-2022³⁹

Although the number of public firms declined from 7,000 in 1996 to fewer than 4,000 in 2022, their total investment, measured by aggregating capital spending and R&D spending, roughly kept up with the rate the economy was growing.

What about revenues? Public firms' revenues kept pace with the growth of the economy. Figure 10 tabulates. In the first and last years of the past quarter-century, public firms' revenues amounted to about 80% of each year's GDP. They became twice as profitable with the same revenue base.

How about employment? It also was steady during this quarter-century. Figure 11 illustrates the slight rise relative to U.S. non-farm employment. Public firms lost employment in the prior quarter-century, before their number peaked. The decline in manufacturing in the 1970s and 1980s largely came from declining employment at large public manufacturers, like the auto industry.⁴⁰ They have not meaningfully lost employment since.⁴¹

³⁹ Source: S&P GLOBAL MARKET INTELLIGENCE, <http://www.compustat.com>.

⁴⁰ Frederik Schlingemann & René Stulz, *Have Exchange-Listed Firms Become Less Important for the Economy?* 143 J. FIN. ECON. 927, 934 (2022), an important article on the course of the public firm during past half-century. Their representativeness measures has the public firm sector more representative in the 1980s of the American economy than today, with their representativeness declining into the 1990s and then, from 1996 onward, the period we examine, staying roughly flat. *Id.* at 928, 945.

⁴¹ Schlingemann and Stulz find employment in public firms declined from the 1970s onward. Most of the decline occurred in the 1970s and 1980s, and most of it came from declining employment in manufacturing. Manufacturing is less important to the American economy today than back then, when basic manufacturing employed many and many large manufacturers were public companies. Service firms are often private, and service industries have become more important to the economy. The authors find public firm employment from 1990 to 2019 was roughly stable as a percentage of total US employment. *Id.* at 934 (Panel A, Public Firms, Employment to US Non-Farm Employment).

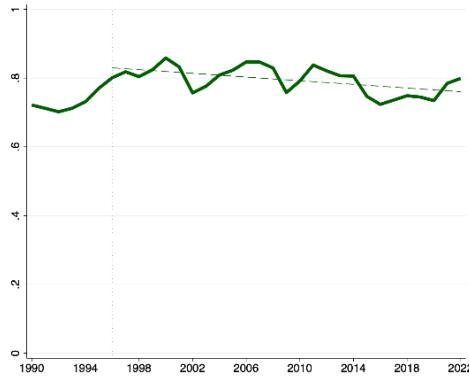


Figure 10. Steady public firm revenue as a proportion of GDP, 1990-2022⁴²

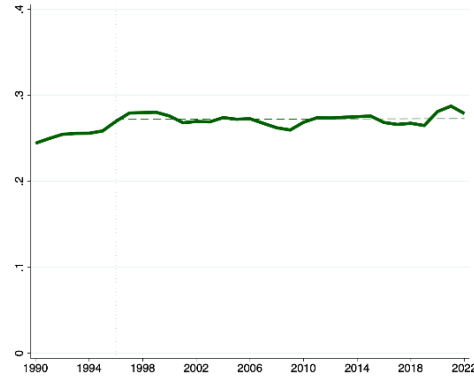


Figure 11. Steady public firm employment as a proportion of U.S. non-farm employment, 1990-2022

Collectively, Figures 3 through 11 do not paint a picture of a weakening, shrinking public firm sector since the number of public firms peaked in 1996. Public firms halved in number, but not in profitability, value, investment, sales, and employment relative to the economy. Core measures doubled; others held steady. This is the central finding of this Article.

But public firms globalized further and some employment shifted abroad, with domestic employment of U.S. public firms declining in the 2000s. *Id.* at 928. Even if we exclude all non-U.S. employees, employment declined by 20%, not the 50% post-1996 decline of the number of firms. I.e., the decline in the number of firms was 2½ times larger than the decline in employment.

The American public firm is contributing less to U.S. employment than before; that decline is a reason for concern. Presumably foreign-based firms or corporate inversions account for some or much of the differences. But recall that we focus on whether the decline in the number of American public firms strongly evidences poor securities and corporate regulation. Substitution of foreign for domestic employment does not. The foreign employment could have been embedded in foreign firms or private American firms; these firms are still subject to American public firm securities regulation. Schlingeman and Stulz also bring forward a measure of public firms' value added. Their value added declined from 1973 to 1996 and in 2020 was about that of 1996. *Id.* at 935 ("global value added . . . reaches a low in the early 1990s [and is] slightly higher at then end of our sample period").

Again, most of these tendencies were strongest in the 1970s and 1980s decline in manufacturing employment and the shift then from manufacturing to service industries. *Id.* at 929. While the decline is outside our post-1996 focus, it, consistently with this Article's thesis, is an I.O. development not a securities regulation development.

⁴² Measuring total revenues of the public firm sector, as we do in Figure 10, risks a distortion. If A sells to B for \$1 million, and B improves the product and sells to C for \$2 million, and C sells to the public for \$3 million, total revenue of the A-B-C sector would be recorded at \$6 million, even though final sales are \$3 million. If A, B, and C merged into a single bigger firm, then the firm's revenue would only be \$3 million. If supply chain length is roughly constant over time, Figure 10 remains relevant in showing that the public sector's total business increased over time. But if the A, B, C sequence added another intermediate step—a D that added further value—then revenue would be recorded as rising even though the sector's business didn't really increase.

Two considerations are relevant. First, the number of public firms decreased during this era, which would, all else equal, tighten the American supply chain. That would make the weight of the American public firm sector heavier than the revenue trend shows. Secondly, each measure that we study indicates imperfectly whether the public firm sector is shrinking. But we show that every measure other than the raw number of firms—market capitalization, income, revenues, employment—points to a public firm sector that is stable or growing, not shrinking.

III. THE POTENTIAL REAL ECONOMY, INDUSTRIAL ORGANIZATION EXPLANATIONS

Part II—this Article’s core—showed that while the number of firms plummeted, these firms became bigger individually, worth more collectively, and more profitable overall. In the aggregate, the nearly 3,900 public firms in 2022 play an economic role *greater* than that played by the 7,000 firms that were public in 1996. The Legal Explanation explains this combination—more profitable, but fewer firms—poorly. We explore in this Part III “real economy” aspects of the public firm that could also explain this package of trends. We in particular examine Industrial Organization Hypotheses. We do not intend to, and maybe cannot, fully and finally evaluate each channel and weigh their import against the Legal Explanations. We instead outline a research agenda, show how real economy pressures *could have* reconfigured the entire public firm sector (and not just the smaller firms most susceptible to the Legal Explanations), and offer some evidence that supports real economy explanations but not Legal Explanations.

We seek to explain two phenomena: first, the reconfigured public firm sector of the past quarter-century as a package of rising profit, rising value, and declining number; and, second, the declining count of public firms as a freestanding change. The I.O. Hypothesis can explain the package of economic power despite fewer firms better than the Legal Explanation. And, even if the count were fully independent of the package, each hypothesis—the Legal Explanations and the real economy, Industrial Organization Hypotheses—contribute to explaining that halving.

Fundamentally, the public firm sector is as big as at its peak in number, but differently configured. Here in Part III we explore but do not resolve why that is.

A. Industrial Organization and Antitrust

Many economists see industrial concentration as having increased markedly in recent decades.⁴³ Analysts differ on why. Some major academic work and many progressive antitrust policymakers⁴⁴ see competition as declining as American industry became more concentrated; the trends shown in Part II are consistent with that progressive perspective. Proponents of the antitrust perspective point to rising corporate profits that are not competed away, to apparently rising markups (as firms free from tight competition sell for a higher multiple of their costs),⁴⁵ and to declining

⁴³ Gustavo Grullon, Yelena Larkin & Roni Michaely, *Are US Industries Becoming More Concentrated?* 23 REV. FIN. 697, 697 (2019) (“Since the late 1990s, over 75% of US industries have experienced an increase in concentration”); Philippon, *supra* note 37; Lawrence J. White & Jasper Yang, *What Has Been Happening to Aggregate Concentration in the U.S. Economy in the Twenty-First Century?* 38 CONTEMP. ECON. POL’Y 483, 483 (2020) (“[A]ggregate concentration . . . appears to have risen moderately but steadily since the mid-1990s.”).

⁴⁴ See COUNCIL OF ECON. ADVISERS, BENEFITS OF COMPETITION AND INDICATORS OF MARKET POWER 1 (2016), https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160502_competition_issue_brief_updated_cea.pdf [<https://perma.cc/3XR8-QCCM>].

⁴⁵ See Jan De Loecker, Jan Eeckhout & Gabriel Unger, *The Rise of Market Power and the Macroeconomic Implications*, 135 Q. J. ECON. 561, 561 (2020) (markups rose “from 21% above marginal cost [in 1980] to 61% [in

dynamism.⁴⁶ “Profits have risen as a share of GDP. . . . [One wonders] why competitive forces have not (yet?) . . . erod[ed] these profits.”⁴⁷

Multiple policymakers, media proponents, and some academic analysts thus blame weakened antitrust policy for rising industrial concentration. They particularly blame the 1980s’ weakening of merger guidelines,⁴⁸ leading the Federal Trade Commission and the Department of Justice’s Antitrust Division in 2022 to consider restrengthening them.⁴⁹ These two government units were motivated by “evidence . . . that many industries across the economy are becoming more concentrated and less competitive.”⁵⁰ The FTC chair says that “decades of mergers have been a key driver of consolidation.”⁵¹ The Attorney General and the head of the Justice Department’s Antitrust Division think that “too many industries have become too consolidated over time.”⁵² Between 1996 and 2020, approximately 4,000 mergers between public firms

2020]”); Philippon, *supra* note 37, at 54; Carl Shapiro, *Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets*, 33 J. ECON. PERSPS. 69, 70–71 (2019); Robert E. Hall, Using Empirical Marginal Cost to Measure Market Power in the US Economy (Nat’l Bureau of Econ. Rsch., Working Paper No. 25251, 2018), <https://www.nber.org/papers/w25251> [<https://perma.cc/B7MM-5PUR>].

⁴⁶ Philippon, *supra* note 37, at 9–10, 51–56; Shapiro, *supra* note 45, at 70–72.

⁴⁷ Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT’L J. INDUS. ORG. 714, 737 (2018) (although Shapiro brings forward much other evidence of competition dropping little or not at all). An aside: increased concentration need not reduce the number of firms. This feature is well-analyzed in industrial organization writing: Posit an economy with ten industries divided among 20 firms, each with 5% of each industry. There is good competition and low concentration in every industry. Each firm is in 10 industries. Each of the 20 firms then spins off their Industry #1 division into separate firms. Those separate firms merge. We then have 21 firms, but there’s now one monopoly. More firms, less competition. Each of the original 20 large firms is about 5% smaller.

While important in theory and for some industries, this scenario fits badly with overall trends. Firms are getting larger and more focused on fewer industries. David Autor, David Dorn, Lawrence F. Katz, Christina Patterson & John Van Reenen, *The Fall of the Labor Share and the Rise of Superstar Firms*, 135 Q.J. ECON. 645, 650, 665 (2020) (“rise in sales concentration within four-digit industries across the vast bulk of the U.S. private sector, reflecting the increased specialization of leading firms on core competencies and large firms getting bigger”). The prior paragraph’s scenario has more focus but 19 smaller firms—inconsistent with the actual U.S. trend. *Id.*

⁴⁸ Orley Ashenfelter, Daniel Hosken & Matthew Weinberg, *Did Robert Bork Understate the Competitive Impact of Mergers? Evidence from Consummated Mergers*, 57 J.L. & ECON. S67, S68–S69 (2014); Gilbert B. Becker, *The U.S. Horizontal Merger Guidelines After One Half Century: Three Steps Forward and One Step Back*, 63 ANTITRUST BULL. 137, 140–41 (2018).

⁴⁹ Federal Trade Commission and Justice Department Seek to Strengthen Enforcement Against Illegal Mergers (Press Release, Jan. 18, 2022), <https://www.ftc.gov/news-events/news/press-releases/2022/01/federal-trade-commission-justice-department-seek-strengthen-enforcement-against-illegal-mergers>.

⁵⁰ *Id.*

⁵¹ Statement of Chair Lina M. Khan Regarding the Request for Information on Merger Enforcement (Fed. Trade Comm’n, Jan. 18, 2022), <https://www.ftc.gov/legal-library/browse/cases-proceedings/public-statements/statement-chair-lina-m-khan-regarding-request-information-merger-enforcement>. Antitrust policymakers’ view may be incorrect. The 1980s’ loosened merger guidelines might have correctly reversed an overly stringent policy. But even so, the loosening could still have accounted for the diminishing number of firms, rising profits, and rising value of the public firm sector.

⁵² Merrick B. Garland, Att’y Gen., Remarks at the Roundtable on Promoting Competition and Reducing Prices in the Meatpacking Industry (Jan. 3, 2022), <https://www.justice.gov/opa/speech/attorney-general-merrick-b-garland-delivers-remarks-roundtable-promoting-competition-and>; Ass’t Att’y General Jonathan Kanter Delivers Remarks on Modernizing Merger Guidelines (Jan. 18, 2022), https://www.justice.gov/opa/speech/assistant-attorney-general-jonathan-kanter-delivers-remarks-modernizing-merger-guidelines#_ftnref2.

occurred. Recall that in 1996 we had 7,000 firms. The 4,000 public firm mergers with other public firms amount to the decline in the number of public firms.⁵³

B. Industrial Organization and a New Winner-Take-All Organization of Business

A lax antitrust explanation has a progressive appeal that could modulate (progressive) SEC commissioners' thinking, especially those who see the public firm as embodying public, social values, with public firms' openness and transparency as positives.⁵⁴ That is, progressives could also (or instead) see the declining number of public firms as resulting from them growing larger due to unwholesome mergers. Progressives could dislike the growing scale of public firms that we documented in Part II, irrespective of any efficiencies. That growing scale could fuel a political and social backlash from owners of smaller firms, their families, and their employees. This negative impact from rising scale, profit, and importance could be helping to fuel the neo-Brandeisian movement in antitrust.

This contrast in policymakers' explanations for rising concentration (weakened antitrust vs. securities regulation) for substantially similar phenomena—increased concentration and fewer public firms—is itself worthy to notice. However, the weakened antitrust explanation for fewer but bigger firms is more prominent in liberal policymaking circles and media than it is in academic analysis.⁵⁵

Much academic work points to other I.O. developments to explain the fewer firms: rising economies of scale, extended networks, and a growing importance of winner-take-all skill, foresight, and industry success. There's substantial Schumpeterian turnover among the most profitable firms, consistent with market

⁵³ B. Espen Eckbo & Markus Lithell, *Merger-Driven Listing Dynamics*, J. FIN. & QUANTITATIVE ANAL. (forthcoming) (MS at 8–9); Gabriele Lattanzio, William L. Megginson & Ali Sanati, *Dissecting the Listing Gap: Mergers, Private Equity or Regulation*, 65 J. FIN. MKTS 1 (2023). We obtain similar public firm merger counts. Appendix Table 3 (upper panel). Eckbo and Lithell also show that the total number of public firm acquisitions (i.e., including their acquisitions of private companies) amounted to 8,000 acquisitions. Eckbo & Lithell, *supra*, at 8. Had these firms stayed separate and all gone public—not plausible overall—there would have been 15,000 public firms.

A related antitrust concern has been that ownership across industries by a handful of large institutional investors weakens competition. José Azar, Martin C. Schmalz & Isabel Tecu, *Anticompetitive Effects of Common Ownership*, 73 J. FIN. 1513 (2018); Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267 (2016); Eric A. Posner, Fiona M. Scott Morton & E. Glen Weyl, *A Proposal to Limit the Anticompetitive Power of Institutional Investors*, 81 ANTITRUST L.J. 669 (2017). *But see* Edward B. Rock & Daniel L. Rubinfeld, *Antitrust for Institutional Investors*, 82 ANTITRUST L.J. 221 (2018); C. Scott Hemphill & Marcel Kahan, *The Strategies of Anticompetitive Common Ownership*, 129 YALE L.J. 1392 (2020). Presumably that anti-competitive pressure, if strong, could have induced inefficient but anti-competitive mergers.

⁵⁴ Donald Langevoort, *The Effects of Shareholder Primacy, Publicness, and “Privateness” on Corporate Cultures*, 43 SEATTLE U. L. REV. 377 (2020); Hillary A. Sale, *The New “Public” Corporation*, 74 LAW & CONTEMP. PROBS. 137 (2011); Donald C. Langevoort & Robert B. Thompson, *“Publicness” in Contemporary Securities Regulation after the JOBS Act*, 101 Geo. L.J. 337 (2013). *See also* Gerald F. Davis, *The Vanishing American Corporation* 87–88 (2016); John Kenneth Galbraith, *The New Industrial State* (1967, rev. ed. 1985).

⁵⁵ A recent comprehensive effort to separate efficiency explanations from anti-competitive ones is in Carl Shapiro & Ali Yurukoglu, *Trends in Competition in the United States: What Does the Evidence Show?* (Nat'l Bur. Econ. Res. Working Paper, Aug. 2024), www.nber.org/papers/w32762. The paper finds considerable uncertainty, with not much evidence “that there has been a widespread decline in competition in the U.S. economy,” although some industries suffered from weakened competition and anti-competitive mergers. *Id.* (MS at 34).

power arising but then eroding.⁵⁶ And there's significant foreign entry to concentrated U.S. industries.⁵⁷

1. *The new networks.* Increased concentration can be the efficient result of *intensified* competition.⁵⁸ New technologies often allow only one firm in an industry, especially if sheltered by patent protection.⁵⁹ Other monopolies arise from network platforms whose operating costs decline greatly for a firm that services all consumers or where the value that users derive from the platform rises if there are more users on the same network.⁶⁰ Facebook is an archetypal network monopoly.⁶¹

FTC commissioners emphasize the importance of network effects on increasing economic concentration.⁶² “[N]etwork effects can ... create lock-in, path dependence, and high barriers to entry ... because most or all of the market may eventually ‘tip’ to

⁵⁶ See Murray Z. Frank & Jing Gao, *The Changing Structure of Corporate Profits* 29 (working paper, Jan. 9, 2024), www.ssrn.com/abstract=4680033 (“Firms in the top profit quintile are more likely to have exited within 5 years than they were are to be in the [same] quintile.”). Cf. JOSEPH SCHUMPETER, *CAPITALISM, SOCIALISM, AND DEMOCRACY* 83 (1942) (creative destruction).

⁵⁷ Mary Amity & Sebastian Heise, *U.S. Market Concentration and Import Competition*, REV. ECON. STUD. (forthcoming).

⁵⁸ Susanto Basu, *Are Price-Cost Markups Rising in the United States? A Discussion of the Evidence*, 33 J. ECON. PERSPS. 3, 3 (2019) (“industrial concentration can [come from] more efficient firms ... gain[ing] market share”); Shapiro, *supra* note 45, at 72, 79–80; John Van Reenen, *Increasing Differences between Firms: Market Power and the Macroeconomy* (Aug. 31, 2018), www.kansascityfed.org/~media/files/publicat/sympos/2018/papersandhandouts/jh%20john%20van%20reenen%20version%2020.pdf.

⁵⁹ Autor, Dorn, Katz, Patterson & Van Reenen, *supra* note 47, at 703 (“technological dynamism, rather than simply anti-competitive forces, is an important driver”); Ufuk Akcigit & Sina T. Ates, *What Happened to U.S. Business Dynamism?* 131 J. POL. ECON. 2059 (2023) (slowing of knowledge diffusion from leading to laggard firms has slowed dynamism); EDMUND PHELPS ET AL., *DYNAMISM: THE VALUES THAT DRIVE INNOVATION, JOB SATISFACTION, AND ECONOMIC GROWTH* (2020).

⁶⁰ Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 J. ECON. PERSPS. 53–54, 56 (2019); James E. Bessen, *Information Concentration and Information Technology* (B.U. Sch. L., Law & Econ Paper No. 17-41, 2017), https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1269&context=faculty_scholarship [<https://perma.cc/M9EX-8MRV>]; Patrick Barwise & Leo Watkins, *The Evolution of Digital Dominance: How and Why We Got to GAFAs*, in *DIGITAL DOMINANCE: THE POWER OF GOOGLE, AMAZON, FACEBOOK, AND APPLE* 21, 26 (Martin Moore & Damian Tambini eds., 2018).

⁶¹ Dina Srinivasan, *The Antitrust Case Against Facebook: A Monopolist's Journey Towards Pervasive Surveillance in Spite of Consumers' Preference for Privacy*, 16 BERKELEY BUS. L.J. 39, 90–92 (2019).

⁶² Christine S. Wilson, Comm’r, FTC, Address at CCIA Conference on Competition, Data, and Innovation in the Digital Economy: All (Industries) in the Same Boat: Staying the Course on the High Seas of High Tech (Mar. 28, 2019), www.ftc.gov/system/files/documents/public_statements/1512148/wilson_remarks_ccia_3-28-19.pdf (“online markets ... susceptible to ‘tipping’ toward one dominant firm”); *The Role of Data and Privacy in Competition: Hearing on Online Platforms and Market Power Before the Subcomm. on Antitrust, Commercial and Administrative Law of the H. Comm. on the Judiciary*, 116th Cong. (2019) (testimony of Rohit Chopra, Comm’r, FTC), www.ftc.gov/system/files/documents/public_statements/1549812/chopra_-_testimony_at_hearing_on_online_platforms_and_market_power_part_3_10-18-19.pdf (“an unregulated market [for data-intensive digital platforms] is likely to tip toward a handful of platforms ... As more users join ... , it becomes even more valuable”); Edith Ramirez, Chair, FTC, Remarks at the 42nd Annual Conference on International Antitrust Law and Policy, Fordham Law School (Oct. 2, 2015), https://www.ftc.gov/system/files/documents/public_statements/810851/151002fordhamremarks.pdf (“network effects may lead to increased concentration ...”). Again, popularity among FTC policymakers can support the truth of the proposition or just show the contrast with thinking at the SEC.

an incumbent who can only be dislodged by a superior product or a significant cost advantage.”⁶³

2. *Scale economies.* Much mainstream economic analyses see much of the new concentration as coming from old-fashioned economies of scale⁶⁴ with higher fixed costs today.⁶⁵ These bigger firms compete, albeit on a larger scale. The cost of today’s upfront investment in factories, patents, and organizational capital, in this understanding, is a higher fraction of a product’s final value than formerly.⁶⁶ The larger efficient scale means the industry can only support three firms instead of six—leading to fewer public firms. Competition today, in this view, demands scale and high markups.⁶⁷

Shorter product cycles require firms to recover set up costs more quickly, which push them toward higher, but competitive markups. Once the production facility and its concomitant technology are built in some industries, the enterprise can supply much of the demand for the product with low variable costs.

Intangibles and the nature of new regulation are thought to contribute greatly to these new economies of scale. Once the firm invests in proprietary software or builds brand recognition, the cost of spreading those advantages over a larger firm are close to zero, thereby propelling firms to grow large.⁶⁸ Similarly, rising regulatory fixed costs in recent decades, such as environmental, safety, and organizational requirements, press firms to be larger, to spread those fixed costs over a wider base.⁶⁹ Basic regulatory costs—leaving aside corporate securities regulation—are estimated at nearly double per employee for small firms over large firms and this differential is said to explain one-third of recent decades’ rise in concentration.⁷⁰

Closely related are ideas that small firms today develop a new technology better than a large public firm, often because they focus on one technological channel and use targeted incentives for executives and researchers that large, public firms cannot.⁷¹ But

⁶³ Noah Joshua Phillips, Comm’r, FTC, Remarks at the Hudson Institute, We Need to Talk: Toward a Serious Conversation About Breakups (Apr. 30, 2019), www.ftc.gov/system/files/documents/public_statements/1517972/phillis_-_we_need_to_talk_0519.pdf.

⁶⁴ Berry et al., *supra* note 60, at 45 (“higher fixed (or sunk) costs can lead to fewer firms in a market, which can result in softer competition, higher prices, and reduced consumer welfare”).

⁶⁵ *Id.* at 48, 54.

⁶⁶ Basu, *supra* note 58, at 9; JONATHAN HASKEL & STIAN WESTLAKE, CAPITALISM WITHOUT CAPITAL: THE RISE OF THE INTANGIBLE ECONOMY 240 (2017). A response is in De Loecker et al., *supra* note 45, at 603.

⁶⁷ Cf. Chad Syverson, *Macroeconomics and Market Power: Context, Implications, and Open Questions*, 33 J. ECON. PERSPS. 23, 27 (2019) (“reductions in trade, transport, or search costs . . . shift[] activity away from smaller, higher-cost producers and toward larger, lower-cost producers”).

⁶⁸ Maarten de Ridder, *Market Power and Innovation in the Intangible Economy*, 114 AM. ECON. REV. 199 (2024). Intangibles can also just keep firms from going public if close ownership and direct information flows to stockholder-owners are vitally important. Disclosure obligations could be more costly for such firms. On the latter, see Daria Davydova, Rüdiger Fahlenbrach, Leandro Sanz & René M. Stulz, *The Unicorn Puzzle* (Fischer College of Business working paper, Feb. 2023), www.ssrn.com/abstract=4255165.

⁶⁹ James B. Bailey & Diana Weinert Thomas, *Regulating Away Competition: The Effects of Regulation on Entrepreneurship and Employment*, 52 J. REG. ECON. 237 (2017).

⁷⁰ Shikhar Singla, *Regulatory Costs and Market Power* 1, 4 (Stan. Bus. School working paper, 2023).

⁷¹ Jonathan M. Barnett, “Killer Acquisitions” Reexamined: Economic Hyperbole in the Age of Populist Antitrust, U. CHI. BUS. L. REV. (forthcoming) (MS at 6–7); Mark A. Lemley & Matthew Wansley, *Coopting Disruption* (SSRN working paper, Feb. 1, 2024), www.ssrn.com/abstract=4713845.

if that small firm develops a successful technology, the firm must get big fast to profit from it.⁷² Jay Ritter, an expert on the IPO process, has brought this idea forward. Once the private firm has a viable product, it has reason to sell rights to make the product—or to sell the firm itself or its technology—to a large public company, which then manages regulatory approvals, manufacturing, marketing, and distribution—tasks that the small firm cannot readily handle. Small pharmaceutical firms are particularly in need of this process. New drug development needs science-intensive people with science skills—people who often lack the organizational skills needed to manufacture, market, and distribute their discovery.⁷³

3. *Skill, foresight, and industry.* The third efficiency explanation is technological. Firms succeed, now more than ever, by their competitive skill, foresight, and industry in making a better product, a better patent, or a better industrial secret that garners most of the market.⁷⁴ Superstar firms emerge from winner-take-all competition.⁷⁵

4. *International competition.* From the 1980s onward, intense international competition in manufacturing, particularly from Chinese manufacturers, hit American firms. It damaged manufacturing firms of all sizes, but many smaller public firm manufacturers presumably could not survive.⁷⁶ (This kind of damage to small firms, we emphasize, is a real economy, industrial organization effect, and not a securities regulation effect.) Smaller public firm manufacturers disappeared, it's said, leaving fewer public firms.

5. *Separating evidence.* Several trends are consistent with both the I.O. Hypotheses and the Legal Explanations, such as the declining number of small firms standing alone. But if the overall package of changes in the past quarter-century is an interrelated, single package—fewer but more profitable, bigger public companies—then Legal Explanations take a backseat to the I.O. Hypotheses. The Legal Explanation cannot explain the overall package; the I.O. Hypothesis can.

The I.O. Hypothesis predicts that larger, typically public companies became more profitable over time by taking advantage of economies of scale (or overcoming competition or better able to reduce labor costs and raise profit⁷⁷). In Figures 3 through

⁷² E.g., Xiaohui Gao, Jay R. Ritter & Zhongyan Zhu, *Where Have All the IPOs Gone?* 48 J. FIN. & QUANTITATIVE ANAL. 1663 (2013).

⁷³ Cf. Ronald J. Gilson, Charles F. Sabel & Robert E. Scott, *Contracting for Innovation: Vertical Disintegration and Interfirm Collaboration*, 109 COLUM. L. REV. 431 (2009).

⁷⁴ Bessen, *supra* note 60, at 2–3; James Traina, *Is Aggregate Market Power Increasing?* 16 (Stigler Ctr., Working Paper No. 17, 2018), <https://pdfs.semanticscholar.org/8059/7e4e80edebd66d3eef57e28d324623ad9ee0.pdf> [<https://perma.cc/TP6C-LEYW?type=image>].

⁷⁵ Autor et al., *supra* note 47, at 649.

⁷⁶ See Robert Feinberg, *International Competition and Small-Firm Exit in US Manufacturing*, 39 EASTERN ECON. J. 402 (2013).

⁷⁷ The fit with one potential I.O. channel: monopsony power, if large, could have transferred value from employees to capital owners. See Daniel L. Greenwald, Martin Lettau & Sydney C. Ludvigson, *How the Wealth Was Won: Factor Shares as Market Fundamentals* (Nat'l Bur. Econ. Res. Working Paper 25769, Sept. 2024), www.nber.org/papers/w25769 (“40% of [the 1989 to 2017] increase [in stock value is] attributable to a reallocation of reward to shareholders . . . primarily at the expense of labor compensation”); Simcha Barkai, *Declining Labor and Capital Shares*, 75 J. FIN. 2421, 2422 (2020); Autor et al., *supra* note 47 (concentration associated with large firms paying wages below employees’ productivity). I.e., concentration allows firms to raise price and sometimes pay labor less. The declining labor share of national income could contribute to the rise in corporate profit of Figure 4. It fits well with the Industrial Organization Explanations.

7, we saw the quarter-century trend of public firms' profit rising faster than the economy grew. That trend of rising profit, larger firms, and fewer firms is consistent with the I.O. Hypothesis but not the Legal Explanation. The I.O. Hypothesis could, but the Legal Explanation would not, explain public firms generating higher profit from the same amount of invested capital over time.⁷⁸ If over-regulation is hurting firms with publicly-issued securities, one would not expect their net income to have doubled as a percentage of American GDP.

Indeed, the evolution of economic profits, presented in Figure 7, provides separating evidence. Economic profit has been shown to reflect firms' abilities to capture economic rent, which increases with industry concentration, barriers of entry, market share, and firm size. That public firms as a whole produced more economic profit in the quarter century since 1996, both in nominal terms and as a percentage of nominal GDP, is consistent with the I.O. Hypothesis. These data are also consistent with the recent work in finance, which indicate public firms have generated more profit per dollar invested over time.⁷⁹ While Legal Explanations are consistent with some trends (and, hence, we do not cast them aside as irrelevant), the I.O. Hypotheses explain more. For example, the Legal Explanations cannot explain why the public firm sector is so much more profitable.

U.S. mergers increased since 1996 more than mergers in other economically advanced nations.⁸⁰ An American public firm was *three times more likely* to merge with another public firm than was a European or Japanese public firm.⁸¹ The finance researchers attribute the diminished number of American firms to 1000s of extra mergers. During the 7 years after the U.S. decline began, there were 300 public-public mergers annually; during the 7 years before the decline began, there were only 120 public mergers annually. That increase would alone account for 1,000 fewer firms. In addition, there were 1,540 more public firm acquisitions of private firms in the 7 years after the decline began than there were before. These two differentials can account for about 2,500 of the 3,000-firm decline.

⁷⁸ When taking the same amount of risk. We note for clarity that our measure does not include the extra profit that a firm would make just by reinvesting its profit one year to make more the next year—compounding. Nor does it include the extra profit that on average accrues from taking more risk. The number we are looking at is what economists call excess “economic profit.”

⁷⁹ Cf. Dong Wook Lee, Hyun-Han Shin & René M. Stulz, *Why Does Equity Capital Flow Out of High Tobin's q Industries?* 34 REV. FIN. STUD. 1867 (2021) (firms whose stock price is relatively greater than its invested capital “receive[d] more funding from capital markets than [firms with relatively lower stock prices] from 1971 to 1996. Since then, the opposite is true. The key to understanding this shift is that large firms . . . have become more important within industries” and capital is flowing out from these large firms because they are investing less but earning more).

⁸⁰ Craig Dojode, Kathleen Kahle, G. Andrew Karolyi & René M. Stulz, *Eclipse of the Public Corporation or Eclipse of the Public Markets?* 30 J. APP. CORP. FIN. 8 (2018); Eckbo & Lithell, *supra* note 53; Lattanzio, Megginson & Sanati, *supra* note 53.

⁸¹ Eckbo & Lithell, *supra* note 53, at 47 (fig. 8). The additional number of U.S. mergers above that foreign baseline accounts for most of the U.S. decline in number of public firms. *Id.*; Lattanzio, Megginson & Sanati, *supra* note 53.

Other corporate law features that are far afield from regulatory burdens are relevant for any international comparison. The corporate law mechanics of merging are straightforward in the United States, and perhaps easier today than they were in the 1980s. The compensation parameters for senior executives incentivize them to favor more mergers, as mergers often allow them to monetize their stock options. Cf. Marcel Kahan & Edward B. Rock, *How I Learned to Stop Worrying and Love the Pill: Adaptive Responses to Takeover Law*, 69 U. CHI. L. REV. 871 (2002).

That high rate in itself does not separate the Legal Explanations from the I.O. Hypotheses because acquisitions of small firms fit with either explanation. But we show next that the bulk of the post-1996 public firm mergers were *not* of large firms acquiring small public firms (for which both explanations fit) but were larger firms acquiring medium-sized public firms and even other large public firms (for which the Legal Explanation fits poorly). Only 561 of the 4,000+ public firm mergers since 1996 involved large firms acquiring small public firms.⁸²

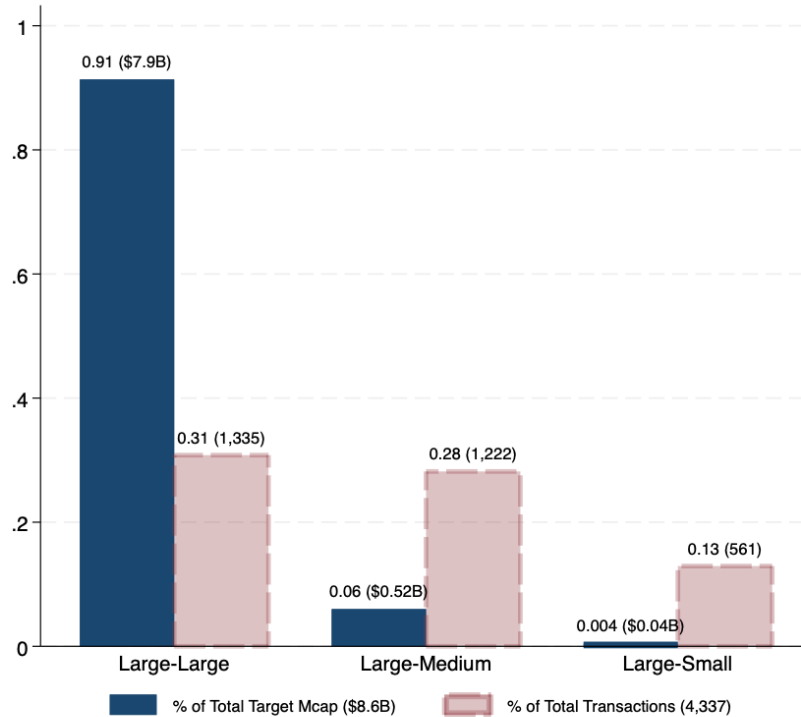


Figure 12. Large Firms Acquired More Large Public Firms than Small Public Firms, 1996–2022⁸³

This figure shows the size distribution of large firms' public firm acquisitions. Large firms are the largest one-third of public firms by market capitalization; small firms are the smallest one-third of public firms by market capitalization; medium-sized firms are the middle third. The first number above each of the three left-hand, blue-colored bars is their percentage of the total capitalization of all mergers and the second (in parentheses) is their 2022-dollar value. 91% of the total dollar-value of mergers were in mergers of larger firms with large firms.

⁸² Appendix Table 3, Distribution of Mergers of Public Companies by Size, 1996–2022.

An aside to look at public firms' acquisitions of private firms is helpful. In general, public firms' acquisitions of private firms could be explained by either the Legal or the I.O. Hypotheses. But the timing of changes in the frequency of public firm acquisitions of private firms (shown in Appendix Table 5) fits poorly with the over-regulatory version of the Legal Hypothesis. Public firms' count of acquisitions of private firms was nearly 400 acquisitions annually from 1996 to 2003, and then dropped to well under 200 acquisitions annually for 2004 to 2022. The trend is consistent with either the deregulation of private capital markets perspective or one of the I.O. hypotheses but not with rising regulatory burdens beginning in 1996 when the number of firms peaked and then started declining.

⁸³ Transactions come from Refinitive SDC Platinum (last accessed Sept. 18, 2023). The size of the transactions (the left-hand bar) is denominated in 2022 inflation-adjusted dollars, with the deflator obtained from The Federal Reserve Bank of St. Louis's Economic Database, at <https://fred.stlouisfed.org/series/GDPDEF> (last accessed Sept. 18, 2023).

Not surprisingly, the total market capitalization of large firms merging with other large firms dominates the distribution. More surprising is that large firms' acquisitions of *other large and medium* firms *also* dominate the *count* of the *number* of mergers.

The three right-hand, red bars show the percentage of public firm mergers for the category and their number (in parentheses). Large firms merging with *other* large firms accounted for 31% of the number of mergers. As the red right-hand bar farthest to the right shows, the number of small firms that large firms acquired was only 13% of the total acquisitions of public firms of other public firms. A very large 59% of public firm acquisitions during the quarter-century were large firms acquiring medium-sized public firms and other large public firms. Thus the bulk of public firm acquisitions in the quarter-century following the peak number of public firms cannot be explained by costly corporate and securities regulation, whose impact should disproportionately affect and induce mergers of small firms.

Large firms acquired 2,557 medium-sized firms and other large firms, but only 561 small firms. Of the total large firm acquisitions, only 561/3,118, or 18%, were acquisitions of small public firms. 2,557 firms—approaching the declining number of firms to explain—disappeared in mergers that the regulatory hypothesis has trouble explaining. Recall that we are seeking to account for a drop of more than 3,000 in the number of public firms. .

Large public firms acquired more *large* public firms than they acquired small public firms, as Figure 12 illustrates. Hence, a noticeable fraction of the public firm reduction in numbers fits badly with the Legal Explanation but well with the I.O. Explanation. Large firms acquired 561 small firms but those same large firms acquired 2,577 medium -and large firms. Of the decline from about 7,000 public firms to about 4,000, only a small fraction can be explained by large firms acquiring small public firms—the acquisition type that the securities law regulatory theses can best explain.

We also examined the size distributions of firms in 1996 and 2022. The median firm in 2022 has a stock market capitalization of \$638 million, well above the size that's most sensitive to the Legal Explanations and a very big 3½ times the size of the 1996 median firm (in constant dollars). That 3½ times increase fits better with I.O. than with Legal Explanations. True, there's a big falloff in the number of firms with a market capitalization below \$150 million—the size for which the Legal Explanation has the strongest potential (although for which I.O. Hypotheses could also be important). Still, that falloff of firms with a market capitalization below \$150 million cannot fully explain the disappearance of more than 3,000 public firms. Our overall interpretation: the Legal Explanations cannot be excluded as in play, but they cannot explain the full falloff in number overall or the 2,500 large firm mergers with other large firms. The I.O. Explanations, in contrast, could potentially explain the full decline in number, but for a major portion—between 561 and 2,000 of the 3,500, depending on which metric is the focus (mergers or distribution)—both the Legal and I.O. Explanations could well be in play.

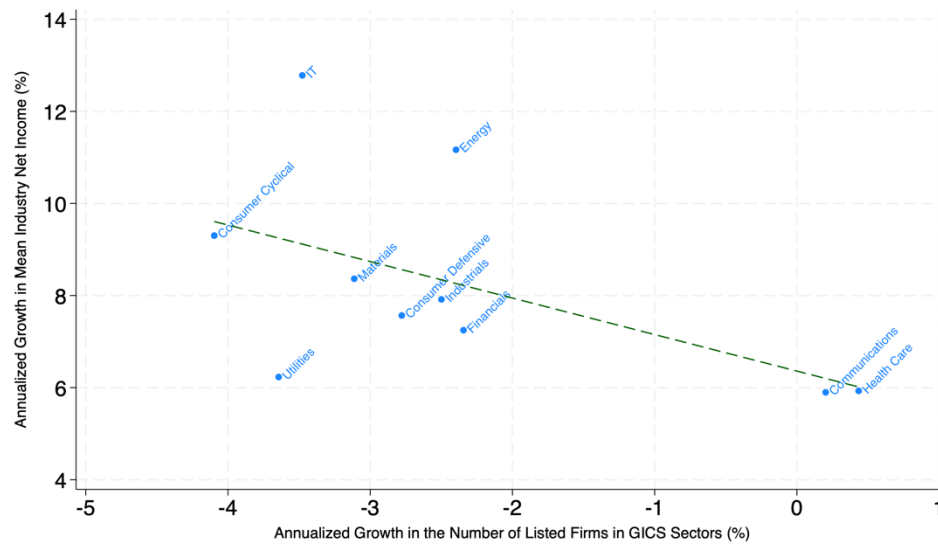


Figure 13. Fewer firms in an industry, higher profits in that industry, 1996-2022

The x-axis measures the growth in the number of listed firms during the 1996–2022 period. (We use the two-digit Global Industry Classification Standard for our industry classification—a commonly-used measure.) The number of firms in industries to the right increased; the number of firms in industries to the left decreased. Industries with a decreasing number of firms had profits that rose more than the industries with an increasing number of firms. The Legal Explanations cannot explain this difference; industrial organization changes can. Sources: Compustat-CRSP. GDP from FRED, <https://fred.stlouisfed.org/>. See Ryan Decker & Jacob Williams, *A note on industry concentration measurement*, FEDS NOTES, Feb. 3, 2023, www.federalreserve.gov/econres/notes/feds-notes/a-note-on-industry-concentration-measurement-20230203.html.

Furthermore, the industries in which the most public firms disappeared post-1996 were those whose average profits rose the most; the industries where the number of firms diminished the least were those whose profitability rose the least. While we hardly think that this relationship is definitive from the Figure 13 result alone, and more work would be needed for a conclusive resolution, the Legal Hypotheses cannot readily explain this difference, as the legal costs of being public presumably are similar across industries. Profitability and industrial concentration correlate, as Figure 13 shows.

C. Reversion to a Prior Mean of Fewer Public Firms?

The central discourse on the diminishing number of firms posits that the diminishing number since 1996 is what is abnormal.

A secondary view we hear is that the 1996 peak was abnormal and the decline gets back to a normal number. At or near the 1996 peak there was a dotcom bubble, which burst. During that dotcom bubble, many tech stocks were highly valued, with many new public offerings adding to the numbers of public firms. The valuation bubble eventually burst and the number of public tech firms decreased.

While plausible that the dotcom bubble burst reduced the number of firms,⁸⁴ it contributes little to what needs to be explained. First, it doesn't explain the post-1996 growth in size and profits in the public firm sector as a proportion of GDP. Second, the dotcom bubble mostly refers to high dotcom *valuations*, not to an unusually high *number* of dotcom firms. Relatedly, third, the number of public tech firms was 1,280 in 1996 (when the U.S. total peaked) and dropped 60% to about 510 by 2022. That's about the same halving that the overall public firm sector experienced.⁸⁵ A drop of 770 tech firms cannot explain a drop of more than 3,000 firms overall. Fourth, the dotcom bubble's lifespan fits poorly with the rise and fall in the number of public firms. The bubble started growing circa 1995 and peaked in 2000. But the total number of public firms peaked near the beginning (in 1996) and started declining before the dotcom peak.

D. Governance Improvements, Public and Private

We have argued that the diminishing number of public firms should be examined in the context of a rise in size, profits, and value of the large public firm. Policymakers should not infer from the public firm sector is weakening economically, because it is not weakening economically since the 1996 peak. And they should be wary of concluding that the diminishing number of public firms is assuredly and overwhelmingly due to corporate securities over-regulation.

Much cannot be explained without I.O. changes. Another I.O. possibility is that the life cycle of the small firm morphed over time.

1. The holding pen. Here's what we mean by the last thought. Posit that successful private firms were often in 1996 unstable when they went public. Some then prospered, figuring out how to add functions they needed for standalone viability. Others went public but could not acquire such capabilities. They were unstable until they merged with a large firm having the missing capacities. Some small public firms failed, closed, or delisted.

Consider next the possibility that financing and governance capacity in private firms improved. As a consequence, private firms that formerly went public, aiming to merge with a large public firm, nowadays get to this near-merger stage while still private. When the firm is ripe to take the growth step today, it still goes public (in a sense)—not by offering its stock to the public, but by merging itself with a public firm.⁸⁶

This account's later private-to-public merger process approximates what it always was, but eliminates one former step, namely, the firm's temporary existence as a small public firm. Small public firms in this account were originally transitioning to becoming a division of a public company as the endpoint. This conceptualization

⁸⁴ Cf. Blair, *supra* note 39, at 672 (“Valuations of ‘dot-com’ companies reached absurd height in the late 1990s, but eventually, reality began to set in . . . [T]he 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”).

⁸⁵ See Appendix Figure 8.

⁸⁶ Cf. Cheffins, *supra* note 13, at 21; de Fontenay, *supra* note 18; Frank Partnoy, *The Death of the IPO*, THE ATLANTIC, Jan. 11, 2020.

contradicts the idea of private firms permanently staying private; many move into the public sector directly, by being acquired by public firms.

2. *Rising intangibles in private markets.* More firms depend today on the quality of their intangible investments than before, when manufacturing was dominant.⁸⁷ Intangible investments are harder for distant public stockholders to evaluate—the investor needs a more nuanced flow of information than public stock markets typically receive. Intangibles-intensive firms are more likely to remain private, with more close, hands-on private owners than previously.⁸⁸ Private firms, in this view, can better govern the increasing reliance on intangibles in American business than can public firms.

This rising intangible aspect *strengthens* both central theses of this paper. *Despite* the rising importance of intangibles, which private firms have an advantage in managing, public firms are bigger and economically more important than they were in 1996. Something is pushing back to keep even more public firms from going private. The I.O. Hypothesis is a strong candidate for this pushback.

3. *Superior governance.* Irrespective of the growth of intangibles, private capital could govern firms more effectively than public stockholders. This argument has been made for some time and must be part of the story.⁸⁹ Public firms have major agency costs, from the disjunction between the interests of senior executives (for more pay, less work, autonomy from oversight, and a bigger empire to run) and financial shareholders (who want the best risk-adjusted return). In the 1980s, this disjunction was particularly pernicious. Michael Jensen's well-known analysis predicted the eclipse of the public firm, due to this managerial dysfunction.⁹⁰ Since then, public firm governance has improved. If the governance of large private firms has improved even more, then they have acquired a competitive advantage.⁹¹ If their governance has deteriorated, for which there's evidence, then the opposite has occurred.⁹²

4. *Financial development in private markets.* Private markets have strengthened and might have done so irrespective of legal changes. Wealthy sovereign investors—such as Saudi Arabia's sovereign wealth fund—can invest directly in private companies today in ways that they could not 25 years ago. Better telecommunication facilitates information flow. Information technology makes it easier for financial managers sitting in Riyadh to assess and manage their investments that finance private businesses.⁹³

⁸⁷ Intangibles are generally the firm's nonphysical assets. For a manufacturer, its machinery, inventory, and the factory are its tangible assets. The intangibles are goodwill, brand recognition, know-how, patents, trademarks, and the results from R&D.

⁸⁸ René M. Stulz, *Public versus Private Equity*, 36 OXFORD REV. ECON. POL'Y 275, 280–81 (2020); Doidge, Kahle, Karolyi & Stulz, *supra* note 80; Matej Bajgar, Chiara Criscuolo & Jonathan Timmis, *Intangibles and Industry Concentration: Supersize Me* (Ctr. Econ. Performance Discussion Paper No. 1806, 2021); Michael Ewens & Joan Farre-Mensa, *Private or Public Equity? The Evolving Entrepreneurial Finance Landscape* (Nat'l Bur. Econ. Rsch. Paper No. 229532, 2021). Rising intangibles is an industrial organization change, not a legal one.

⁸⁹ Michael C. Jensen, *Eclipse of the Public Corporation*, HARV. BUS. REV., Sept.-Oct. 1989.

⁹⁰ *Id.*

⁹¹ Cf. Cheffins, *supra* note 13, at 3 (strength of private companies' boards).

⁹² Elisabeth de Fontenay, *Private Equity's Governance Advantage: A Requiem*, 99 B.U. L. REV. 1095 (2019).

⁹³ Cf. Kathleen M. Kahle & René Stulz, *Is the US Public Corporation in Trouble?* 31 J. ECON. PERSPS. 67, 85 (2017) ("the internet has reduced search costs As a result, private firms have come to have relatively easier access to funding"). Presumably investment in public firms is eased as well.

Pension funds that might previously have invested only in public securities, real estate, and loans, now can make significant private equity investment.

We do not doubt that this strengthening of private financial channels is important. It explains why some private businesses exist today, and why they can grow in ways that they could not grow a quarter-century ago without going public.

Yet, *despite* the advantages of going or staying private, the public firm sector is bigger and more profitable than ever. Private finance is getting better and private firms bigger, but since 1996 so is public firm finance and so are public firms. Something like the real economy, I.O. considerations must be pushing back to stop even more of the business now in the public firm sector from exiting and joining the private firm sector.

5. *Relative size of public and private financial markets.* Considerable attention has been given to the growing importance of financial markets for private firms. This focus deserves the attention it has received. Important work shows the growth of the financial markets' capacity to finance private business.

We indeed have many more unicorns—billion-dollar private firms—today than before, and have a growing capacity of private markets to finance ever larger firms. But we do contest the notion that this private financial growth has been, say, at an order of magnitude faster than the growth of financial value in the public firm sector.

The growth we document for public firm value and profits during the past quarter-century roughly tracks that of the growth in value of private firm value. Figure 14 traces the spectacular growth in value of private business (using tax data). But that growth matches the rate of the rise in public firm stock market capitalization documented in Figure 8; it is not much greater.⁹⁴



Figures 14. Both rising: stock market capitalization and private equity value, 1996-2022

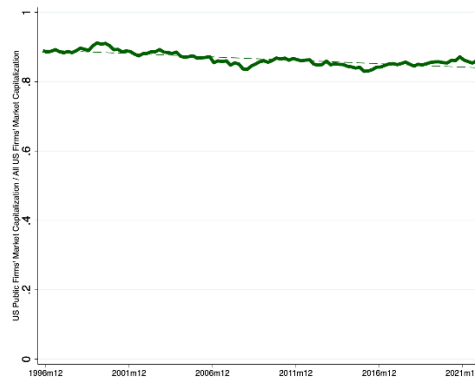


Figure 15. Ratio of stock market capitalization to private equity value, 1996-2022

⁹⁴ Federal Reserve researchers obtained values similar to ours for the increase in the value of the private business sector. Jesse Bricker, Kevin B. Moore & Alice Henriques Volz, Private Business Wealth and Rates of Return in the U.S. (Feb. 2021 working paper), http://www.ecineq.org/wp-content/uploads/papers_EcineqLSE/EcineqLSE-218.pdf.

These two figures illustrate the same phenomenon: the value of private investment in the United States has been rising sharply during the past quarter-century, but not more sharply than the value of public equity investment. The left figure, Figure 14, traces the two; the right figure, Figure 15 shows the market value of public equity as a percentage of the total market value of public and private equity. It is nearly flat for the past quarter-century. Sources: Federal Reserve Financial Accounts of the United States, <https://fred.stlouisfed.org/series/TNWMVBSNNCB> and <https://fred.stlouisfed.org/series/NCBCEL>.⁹⁵

To buttress a perspective that the growth of the private sector is not materially different from that of the public firm sector: The largest twenty-five American companies, measured by revenue, are still public companies. Of the top 500 American companies by revenue, 80% are public firms.⁹⁶

Both sectors are growing, but the growth of the private firm sector at the expense of the public firm has been exaggerated. The value of equity from firms' tax filings shows that equity in private firms as a percentage of equity in the aggregate of all public and private firms grew from about 11% to 14% from 1996 to 2022. That quarter-century growth in an economy as large as the United States is not insubstantial. But at that rate of growth, public and private markets will not achieve parity for another four centuries. See Figure 15.

In another dimension, the private financing channels' strength is often measured against public firm capital-raising. But private firms capital-raising prowess does not mean that they are "gaining on" the public sector. Private firms, especially those backed by venture capital, are often growing and need new investment now because their capacity to generate income and cash is limited. They often lose money initially. Larger, mature public firms do not raise new capital because they have earnings and positive cash flow that they can reinvest in valuable projects.

I.O. similarities may be in play for both the public firm and the private firm sectors. If economies of scale are driving the growth (and rising profitability) of public firms, then they might be doing the same for private firms. Scale economies and winner-take-all industries could extend to privately-held businesses and help to explain the rising number of so-called "unicorns"—private firms with a value greater than \$1 billion. Uber, for example, may be in a naturally concentrated business, and is a large privately-held firm.⁹⁷ Unicorns are no longer rare. Like the growth of large public firms,

⁹⁵ This measure, although one of the most precise available, is not of private equity alone but of all domestic private firms' equity market values. Hence, it approximates. It comes from the Board of Governors of the Federal Reserve System (US), All Domestic Sectors; Closely Held Corporate Equities; Liability, Level [BOGZ1FL883164125Q], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/BOGZ1FL883164125Q>, July 30, 2023. These data are based on estimated market values for private firms (C-corporations and S-corporations), by applying public-company valuation multiples with an assumed discount. The market value of S-corporations is estimated by multiplying the net worth data of S-corporations in each industry (identified by 2-digit NAICS codes) from the IRS, SOI Table S-Corporation Returns: Balance Sheet and Income Statement Items, by Major Industry, by the average ratio of market value to net worth from Standard and Poor's Compustat for public companies in the same nonfinancial industries. The market value of C-corporations is estimated by multiplying the revenue data of companies that appear on Forbes' annual list of America's Largest Private Companies by the ratio of total market value to total revenue of public companies from Standard and Poor's Compustat with similar industry, employment, and revenue profiles. The total market value of C-corporations and S-corporations is adjusted downward by 25 percent to reflect the lack of liquidity of closely held shares.

⁹⁶ Will Gornall & Ilya A. Strebulaev, *The Economic Impact of Venture Capital: Evidence from Public Companies 2* (SSRN working paper, June 2021), www.ssrn.com/abstract=2682841.

⁹⁷ Uber illustrates why large private firms need not come at the expense of the public sector. Intuitively, Uber's business comes at the expense of taxi companies, car services, public transportation, and private car ownership.

the private firm sector's largest firms are larger today than they once were—some from by amalgamating smaller private firms.

* * *

We do not seek to definitively evaluate the relative growth of the public and private sectors. Instead, we show that the announced growth of the private sector and its newly-won capacity to (i) raise large capital and (ii) grow privately beyond the size that in prior decades required the firm to go public do not contradict the public firm analysis we have done here. The value of financial assets has been rising everywhere.

E. Pushbacks on the Industrial Organization Ideas We Advance

Several considerations could weaken this Article's main thesis—that public firms are, by every measure we assess other than number, as important in 2022 as they were in 1996. Other considerations could weaken secondary lines of this Article, such as whether I.O. Explanations play a major role in explaining the declining number (and increasing economic weight) of the public firm sector.

1. *Globalization.* We showed in Part II that the public firm sector is as big as it was in 1996, or bigger, when measured by stock market capitalization, revenues, profits, and investment. But are these *American* revenues, profits, and investment? The world globalized greatly in the past 25 years. Is the continued strength of the American public firm sector due to its listed firms excessively globalizing?

At a basic level, no—we do not include foreign-origin firms whose stock is listed on an American stock exchange.⁹⁸ Still, U.S.-sourced pre-tax profit was steady—not halving, as the number of firms—while foreign-sourced pre-tax profit rose. The Appendix figures illustrate.⁹⁹ Some of that rise seems to have come from multinationals allocating profit from the U.S. to foreign nations¹⁰⁰ and from corporate inversions. And globalization is itself an aspect of industrial organization.

But recall our central policy inquiry: is the view that public firms are weakening point a finger at burdensome securities regulation (or weakened private firm regulation) as the culprit? Rising foreign-source income should actually *weaken* such SEC-regulation-based propositions: (i) those newly globalized business segments of American public firms could have been owned privately or (ii) they could have been

⁹⁸ We looked at U.S. incorporated companies only and further limited the look to firms listing ordinary common shares. Foreign companies listed in the U.S. were excluded. Foreign firms whose stock trades directly or indirectly in the United States (through the trading of receipts for the stock) were also excluded. This excludes inversions—American firms that reincorporated abroad but continued their American operations—and substantively thus should be included as part of American profits, revenues, investment, and employment. Multinationals presumably seek to allocate profit to the lowest-taxed jurisdiction when they have that discretion. To the extent inversion numbers and multinational profit allocations from the U.S. increased during the 1996-2022 period, such patterns would steepen the slope of the relevant trends.

⁹⁹ See Appendix Figure 1. The impact of changing tax rates and different tax rates across different countries is largely eliminated because we compare pre-tax profit throughout. Cf. Shapiro & Yurukoglu, *supra* note 55 (MS at 19, fig. 1) (pulling out foreign profit dampens the profit slope, which still rises, 1996-2022).

¹⁰⁰ Thomas Tørsløv, Ludvig Wier & Gabriel Zucman, *The Missing Profits of Nations*, 90 REV. ECON. STUD. 1499, 1499, 1504, 1510 (2022) (U.S. domestic profits would increase by about 10% if shifted profit were reported as U.S. profit).

owned by companies originating outside of the United States. In 2022, however, America's stock market investors own them. They are in American-based public firms, subject to American corporate securities regulation.

The problem with Legal Explanation here is that it anticipates that the securities law burdens should be driving these businesses *out* from the American public firm. If *more* foreign business is coming under the umbrella of the American public firm and its regulatory structure, then American law and financial institutions are attractive, not unattractive.

2. *Is it just the FAANGs?* Several large new-economy tech companies have high stock market capitalizations. Could their growth *alone* explain the core results—that the public firm sector has but much more profitable firms in 2022 than in 1996?

To check, the profit and stock market capitalization numbers were run again but without the FAANG companies—Facebook (Meta), Amazon, Apple, Netflix, and Google (Alphabet). The rise in profit and capitalization persisted without the FAANG companies.¹⁰¹ (If it did not, this would identify the I.O. change, not contradict that there was one.) And even when we excluded the 500 largest companies—the S&P 500—the remaining public firms' total net income and market value stayed steady relative to GDP, even as the *number* of public firms outside the S&P 500 declined, from about 6,500 to 3,500.¹⁰²

3. *The Legal Explanations as killing the IPO market.* A proponent of the Legal Explanation could retort: "I can concede that the public sector has morphed and, yes, it is not smaller. Yes, it's just as economically powerful as ever. Or more so. But the IPO process of private firms going public is now so badly damaged (because of the Legal Explanations) that IPOs are dead. There's no longer a stream of private companies going public. Eventually the public sector will be hurt further."

First off, even if true, it still does not justify a syllogism that the halving tells us that regulation is too costly. Too many of the firms in the missing half are not small, recently-gone-public firms for which the Legal Explanations could be strong. Furthermore, the changing character of the IPO process roughly parallels that which we have shown to be the case for public firms overall: fewer but more valuable IPOs. The total *value* of the firms that go public is declining much less slowly than the number of IPOs. The trendline flattens considerably when the focus shifts from numbers to dollars, as seen in Figures 16 and 17. Indeed, while the trend over time of the *number* of IPOs is statistically significant and negative, the trend over time of the IPOs' capitalized *value* is statistically no different from zero. In this sense, the IPO market is almost holding steady. And if one considers the dot.com boom of 1998, 1999, and 2000 to have

¹⁰¹ Appendix Figure 2. Cf. Eric Posner, *The Monopolists Fight Back*, PROJECT SYNDICATE, Nov. 23, 2023.

¹⁰² Appendix Figures 3 and 4. We also examined the relative growth of small and large firms. The smallest firms, which would be among those most sensitive to the costs associated with the Legal Explanation, grew. But the bigger firms—many of which were products of the biggest mergers—grew more. Appendix Table 2 illustrates.

Corporate investment, however, slightly concentrated. Although it rose in the public firm sector overall, total investment slightly increased in the S&P 500 firms but slightly decreased in the smaller non-S&P 500 firms.

aberrationally caused the value spike around 2000, subtracting it would flatten the trendline even more and show IPO proceeds *as rising*.¹⁰³

Indeed, the slope of the trend-line depends greatly on the period chosen. Had we stopped measuring at the end of 2021, the trendline for the value of the IPO market would have *risen*, even with the early-period dot.com boom as part of that trendline.

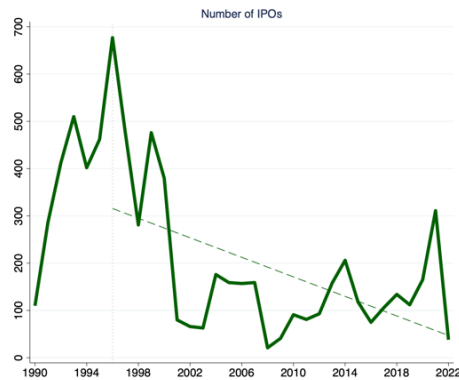


Figure 16. The number of initial public offerings, 1990-2022

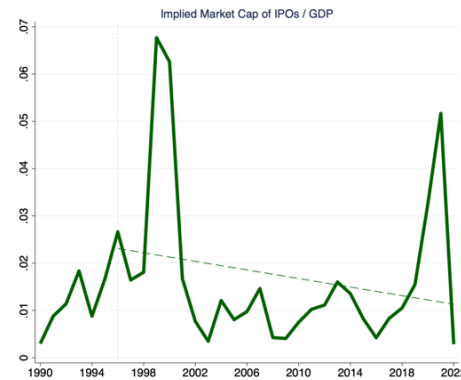


Figure 17. IPO's value, scaled to GDP, 1990-2022¹⁰⁴

The left figure shows the number of previously private firms that initially sold their stock into the public in each year. The three-decade trend in numbers of IPOs is down sharply, as corporate discourse indicates. But the right-hand figure shows that the total value of private companies moving into the public sector has declined much less sharply. And in the last decade the trend is rising, not declining. The dot.com boom of 1998–2000 is a local spike; in the absence of the dot.com boom, the trendline would have trended up. Lastly, the trendline is sensitive to the start-year and the stop year. E.g., when we earlier measured the capitalization trendline through 2021, its slope was positive.

In recent years, SPAC (or “special purpose acquisition corporations”) transactions have become common: a public company is formed without an operating business but with capital to acquire one. When it acquires a private business, the transaction is functionally equivalent to the private company going public. For simplicity in Figures 15 and 16, we just illustrate the trends for traditional IPOs. In Appendix Figure 5, we illustrate the trend for traditional IPOs combined with special purpose acquisition (“De-SPAC”) transactions and also add direct acquisitions of private companies by already public companies. The results are similar: a decline in numbers over the quarter-century, but a much more shallow decline in market valuations. SPACs were low in number annually—less than 20 per year—until 2020. SPACs acquired about 150 private firms in 2020 and 2021, and amounted to 300 “IPO-substitutes” for the total period. Including them would dampen the downward trend.

The Legal Explanation could explain the IPO decline. To the extent that the decrease in IPOs is severable from the big trend—bigger, more profitable, and more

¹⁰³ The stock market value of a firm that goes public comes from the total value of its stock. If the firm sells 100 shares to the public for \$5 per share, it receives \$500. If it has 1,000 shares outstanding (in public and private hands) after the IPO, its total stock capitalization and, hence, its implied value, is \$5,000.

The fact of more IPOs in recent years being later stage, larger private companies has been noticed before.

¹⁰⁴ Source: Ritter, *supra* note 7. Lattanzio, Megginson & Santi, *supra* note 53, show that improved private financing induces two offsetting effects for the number of public firms: Yes, private firms can grow larger without going public. But more private firms are founded and get good funding, expanding the pool of healthy private firms, some of which grow large enough to go public. The authors provide evidence that the latter effect—of more solid private firms that can go public—is as important as the former. Better private financing has not, they find, diminished the net number of public firms.

valuable companies—then the Legal Explanation could play a substantial role in that decrease in IPOs.

The average number of IPOs per annum was 256 from 1960 through 1996, in Jay Ritter’s definitive compilation.¹⁰⁵ The per annum average declines after 1996. Had the rate prevailing through 1996, when the number of public firms peaked, continued, about 2,400 additional IPOs would have occurred through 2022.¹⁰⁶ Although many of these would have merged during this quarter-century or closed or gone private, the net number would contribute to the missing 3,500 firms. Here, the Legal Explanation could explain the decline. But if the IPO decrease was embedded in the overall reconfiguration package (bigger firms, more profits), the Legal Explanation does less well.

Another aspect of the “missing” IPOs: In the 7 years before the decline started, \$164 billion of private firm value was acquired by public firms; in the 7 years after, \$566 billion was acquired. And in the quarter-century after 1996 \$2 trillion in private firm value was acquired. Private firms *were* moving into the public sector, presumably including many of the “missing” 2,400 in the prior paragraph. But they were moving directly from private status to divisional status at a public firm.¹⁰⁷

4. *Declining investment opportunities for the average investor?* Some worry that fewer public firms means a narrowing of the investments available to the average American stockholder. If private investments are more lucrative but inaccessible, or are from distinct sectors, perhaps there is reason to be concerned.¹⁰⁸

That, though, is a policy concern separate from our focus on whether the public sector is shrinking. It is not shrinking.

Still, a brief comment is in order. First, if much of the changed configuration of the public sector came from mergers, then a diversified investor could still hold a portfolio similar to the unmerged portfolio.¹⁰⁹ The sector’s assets, businesses, and overall portfolio in 2022 would resemble that of 1996, but be embedded more in merged than separate firms. Second, one big boost to the private market is that investors who previously could not access private companies now can. Even individuals get access through their pension funds. Third, the common belief that excess returns are available from private markets lacks powerful supporting evidence.¹¹⁰

¹⁰⁵ Jay R. Ritter, IPO Data, <https://site.warrington.ufl.edu/ritter/ipo-data/> (accessed Jan. 12, 2023) (IPO Statistics for 2022 and Earlier Years, tbl 8).

¹⁰⁶ This analytic is more controversial than it first seems. We took Jay Ritter’s average because it’s the definitive compilation and we take it back to the year his compilation starts. But if one started with other years, one could derive a graph showing an even bigger decline in IPO numbers.

¹⁰⁷ Appendix Table 5 (top panel). This increase fits both the I.O. Hypothesis and the Legal Explanation.

¹⁰⁸ Cf. Partnoy, *supra* note 86 (reporting the general concern and SEC commissioners’ criticism of such financial exclusion: “only the wealthiest members of society will enjoy [private firms’] gains, intensifying inequality”).

¹⁰⁹ See Appendix Table 9, which maps the Sharpe ratio over time. The Sharpe ratio is a standard, albeit imperfect, measure of portfolio’s return relative to risk. The trendline has been flat for that ratio since the 1996 decline in the number of public firms began.

¹¹⁰ Erik Stafford, *Replicating Private Equity with Value Investing, Homemade Leverage, and Hold-to-Maturity Accounting*, 35 REV. FIN. STUD. 299 (2022) (private equity returns replicable using public sector firms; and “[d]irect investments in private equity funds earn lower mean returns than a replicating strategy . . . with public equities . . .”); Francesco Franzoni, Eric Nowak & Ludovic Phalippou, *Private Equity Performance and Liquidity Risk*, 6 J. FIN. 2341 (2012) (illiquidity of private equity investments “reduces alpha to zero”).

On the lack of strong evidence: If higher risk-adjusted returns, net of costs, were common in private markets, then the controlling, private owner presumably could lower the company's cost of capital by raising funds in the public stock market; the purportedly lower return on capital in the public market would allow the owner to sell future earnings to public investors at a higher price than by selling to private investors. In equilibrium, the return on capital, adjusted for risks and costs, should converge in public and private markets.

5. *The Legal Explanations as propelling the I.O. results?* Could the Legal Explanations have induced the mass mergers of public firms over the past 25 years? The argument would be that the fixed costs of being public could be spread over bigger firms more readily than over smaller firms. Hence, public firms merged down to a smaller number of larger firms. This is conceptually plausible. The question is how big a part of the story it is.

The measured recent cost additions suggest legal propellants are not a huge part of the I.O. Explanation. A Treasury Department task force “place[d] the average cost of achieving initial regulatory compliance for an IPO at \$2.5 million, followed by an ongoing compliance cost, once public, of [\$1.8] million per year.”¹¹¹ For a large firm, these are small numbers; however, for a small firm contemplating an IPO, the expenses are meaningful. The average public firm has \$4.7 billion in revenue and \$609 million in profit. The typical expenses of being public thus constitute under 0.004% of revenues and under 0.3% of profit.

Other techniques to estimate the net cost to firms of securities regulation also yield low costs. One technique examines whether firms' sizes bunch below the level at which a regulatory constraint kicks in; if there's much bunching, then firms fear going above the constraint; if there's little bunching, the costs can be presumed small. Dhammika Dharmapala found little bunching below the level at which Sarbanes-Oxley's thresholds kicked in.¹¹² Michael Ewens, Kairong Xiao, and Ting Xu examined multiple thresholds for securities regulation and found the present value of the regulatory costs to be more than that in the Treasury and Dharmapala studies, but still small for the median firm.¹¹³ Annual costs measured out at about one- or two-tenths of a percent of firm value—a very small portion of the very large rising profit of the public firm sector we showed in Part II of this paper.

¹¹¹ IPO Task Force, *Rebuilding the IPO On-Ramp: Putting Emerging Companies and the Job Market Back on the Road to Growth* (Oct. 20, 2011), www.sec.gov/info/smallbus/acsec/rebuilding_the_ipo_on-ramp.pdf. The alternative view is that as firms grow and go public, they need to adopt more sophisticated accounting and control mechanisms; the public offering forces many to do what they would need to do anyway.

The Treasury task force's estimate, based on survey evidence from 2011, was at \$1.5 million annually. In 2021 dollars, that amounts to \$1.8 million annually. This is the compliance cost for the firm that goes public. Larger firms' ordinary auditing costs are higher, often in the \$25 million per annum range. Michael Cohen, *Audit Fees Edged up from 2020 to 2021*, ACCOUNTING TODAY, Nov. 7, 2022, <https://www.accountingtoday.com/news/audit-fees-edged-up-from-2020-to-2021>.

¹¹² Dhammika Dharmapala, *Estimating Firms' Responses to Securities Regulation Using a Bunching Approach*, 24 AM. L. & ECON. REV. 449 (2022).

¹¹³ Michael Ewens, Kairong Xiao & Ting Xu, *Regulatory Costs of Being Public: Evidence from Bunching Estimation*, 153 J. FIN. ECON. 10375 (2004). The authors find a noticeable cost jump after Sarbanes-Oxley, which thereafter reversed. *Id.* at 29.

These are not big numbers to begin with. And it's plausible that the percentages—measured for smaller firms, at the threshold of going public or of being regulated—decline for very large firms.

True, even this expense level could induce, and presumably does induce, some small public firms to merge and stops some small private firms from going public. But too few dollars are involved to explain why bigger firms would merge with other big firms without I.O. benefits. Still, some level of the cost of being public comes from rules such as those that require disclosures about the firm's business. Small firms give a strong signal of the prospects of their focused business; if that small business is embedded in a large firm, the large firm can often avoid signalling the profitability of that corner of the firm.

Recall, however, that for the halving to justify in itself that securities markets are over-regulated, it must explain the disappearance of half of the public firms; it must impact the median firm, not just the small ones. And recall that more than 2,500 of the 4,300 public firm mergers since 1996 do not involve small firms. Many were *mega*-mergers, such as mergers of Heinz and Kraft, Anheuser-Busch and Miller, CVS and Aetna, and Disney and 21st Century Fox.¹¹⁴

Other costs of being public are not fixed costs, like the risk of being sued. Some risks and costs of suit rise with bigger size. The bigger firm is a bigger target. But if true and important, then something else—like one of the I.O. Hypotheses—must be pushing back, because the firms have become much bigger and thus subjected themselves to those lawsuit risks even more than at the beginning of quarter-century under discussion.

Consider Sarbanes-Oxley more closely. (Sarbanes-Oxley, passed in response to the Enron and WorldCom scandals, has been criticized as wrongly raising the costs of small firms being public. It has been controversial during the past two decades.) The Legal Explanation would predict a spike upward in large firms absorbing smaller firms when Sarbanes-Oxley purportedly raised the regulatory costs of being public. But we found no such spike.¹¹⁵

Compare the magnitude of legal costs to the last quarter-century's rise in profitability. Basic securities law compliance for a small firm going public is about \$1.8 million per year. For small companies with a market capitalization of \$100 million

¹¹⁴ Appendix Table 3. MirrorReview, Biggest Mergers and Acquisitions of the Decade (2010–2020), www.mirrorreview.com/15-biggest-mergers-and-acquisitions-of-the-decade-2010-2019/. These deals ranged in size from about \$67.5 billion to \$100 billion. Million-dollar expenses due to going-public regulation would not seem to be major motivators for hundred-billion-dollar mergers.

¹¹⁵ Appendix Table 4. Other post-Sarbanes-Oxley trends fit badly with the Legal Explanation. The number of public firm acquisitions of *private* companies *declined* in the post-Sarbanes-Oxley period from the pre-Sarbanes level. Appendix Table 5; Eckbo & Lithell, *supra* note 52, at 58. Going private transactions rose in the first year after Sarbanes-Oxley. But there was no detectible impact on the number of going private transactions in later years. Ehud Kamar, Pinar Karaca-Mandic & Eric Talley, *Going-Private Decisions and the Sarbanes-Oxley Act of 2002: A Cross-Country Analysis*, 25 J.L. ECON. & ORG. 107, 117 tbl. 1, 121, 123 tbl. 6 (2008). The JOBS Act in 2012 sought to increase IPOs by relaxing the Sarbanes-Oxley and related regulation. But it was followed by no more than a modest uptick in IPOs. Cheffins, *supra* note 13, at 13.

or so, this is a noticeable expense.¹¹⁶ For the more than 3,000 companies that disappeared, the aggregate expense could well have reached \$5.4 billion (from 3,000*\$1.8 million)—also not a small amount. If Sarbanes-Oxley and other legal burdens induced the bottom 3,000 companies in 1996 to be folded into the top 4,000 in the subsequent quarter-century, then profits could have increased by that \$5.4 billion.¹¹⁷ If mergers boosted profit primarily by lowering compliance and related costs, then the Legal Explanation could explain the I.O. results of rising profits and increased concentration.

But what was happening to public firm profitability during that quarter-century? In 1996, public firm pretax profits were \$587 billion (or more than \$1.1 trillion in inflation-adjusted 2022 dollars). By 2022, public firm profits were \$2.1 trillion. Public firm profits increased by \$1 *trillion* as 3,000 firms disappeared. The \$5.4 *billion* compliance savings cannot account for that 200 times greater \$1 *trillion* rise in pretax profits. True, other costs of being public are in play. But we are unaware of any estimate that these costs amounted to a trillion dollars. Yet, for the Legal Explanation to prevail in explaining this package of related phenomena, we need to see legal burdens accounting for a trillion-dollar savings from the mergers, allowing for that trillion-dollar rise in profits. The I.O. Explanation can handle the trillion-dollar profit increase. The Legal Explanation cannot.¹¹⁸

IV. IMPLICATIONS FOR CORPORATE LAW POLICYMAKING

Our main purpose for this Article is to demonstrate that public firms in the aggregate are as weighty as they were when they peaked in number in 1996. We accomplished this in Part II. The declining number of public firms is not in itself as worrisome as analysts and some SEC policymakers think. Policymaking consequences follow.

¹¹⁶ US Treasury IPO Task Force, *supra* note 111; Protiviti, SOX Compliance Amid Rising Costs (2022), <https://www.protiviti.com/US-en/insights/sox-compliance-survey> (similar expense range). The SEC, however, suspended the attestation requirement for companies with a public float of less than \$75 million. Smaller Reporting Company Definition, SEC Release No. 33-10513, June 28, 2018, 17 C.F.R. § 240.12b-2 (2021).

¹¹⁷ Larger firms presumably bear higher costs than that \$1.8 million annually. But these too do not seem commensurate with the trillion-dollar profit rise described in the next paragraph. Audit fees for larger companies often amount to about \$25 million. *See supra* note 111. Even if all of these fees were due to excess regulation, they would account for tens of billions of dollars, and could not explain the trillion-dollar rise in profit. Some costs, like litigation costs, probably scale to the size of the firm.

The work that extrapolates costs from bunching below regulatory thresholds is relevant. One study finds no bunching—Dharmapala, *supra* note 112. No bunching, no costs. Ewens, Xiao & Xu, *supra* note 113, find total bunching pointing to regulatory costs of about 3.5% of the average firm's gross earnings. *Id.* at 28. A bigger number, but still not a trillion-dollar event.

¹¹⁸ Another small firm counter is subject to the same criticism. Small firms give away information about their business due to SEC disclosure requirements. If that business is hidden as a division of a large firm, SEC rules do not always require disclosure of that division's results. This keeps good business results secret for longer, facilitating more profitmaking. Although it could be a factor accounting for the acquisitions of 100s of small firms in the past quarter-century, it is implausible that this disclosure aspect accounts for \$1.4 trillion in increased profit, and the halving needs to account for 3,000 fewer firms. Moreover, firms are on average focusing their business on fewer business segments; conglomerates are disappearing, or have disappeared. Less can be hidden from public scrutiny if the acquired business is part of the acquiror's main effort.

A. How the SEC Evaluates the Strength of the Public Firm Sector

Policymakers at the SEC measure the strength of the public firm sector by the number of firms and find the downward trend worrisome. But in assessing how well corporate securities regulation is working, policymakers should focus less on the number of public firms and more on the metrics we bring forward—size of the stock market, profits, revenues, investment, and employment.

More tellingly, the perspective that we show to be misleading—looking at the *number* of firms and not the sector’s *other indicia* of continued *strength*—mistakenly buttresses the over-regulatory thesis. A diminishing public firm sector resonates with those who fear that regulatory burdens are becoming weightier and lack sufficient benefits. But that perspective overemphasizes one relevant number and ignores the others. That distorted perspective erroneously boosts a negative overall view of corporate securities regulation. (Perhaps obvious but it bears mentioning that the existence of costs does not mean that these costs must be reduced or eliminated. The costs could produce the benefits of being public—access to large pools of capital, access to specialized management skills, liquidity for investors, an acquisition currency, and so on. A stock market with less fraud is one in which honest firms can command a higher price. Investors must pool good firms with bad ones when the investors price firms if the investors cannot discover up front where the fraud is. If there’s less fraud, the investors will pay a higher price for the higher quality pool.)

B. Impact on Current Regulatory and Deregulatory Efforts

The SEC’s current regulatory efforts could shift due to the I.O. Hypothesis and with the reconceptualization that public firms’ weight in the economy is not diminishing. Here we give one example: proposed changes to Regulation D, governing which companies must register as regulated public companies.

On the SEC’s agenda is a proposal to reduce the number of companies that can stay private without having to register as public companies with the SEC.¹¹⁹ The statute and rule (“Reg D”) require that firms with more than 500 shareholders who have characteristics indicating the shareholders are less sophisticated must register as public companies.¹²⁰ Proposals are on the table to count groups by their individual members,

¹¹⁹ SEC, Revisions to the Definition of Securities Held of Record (proposed amendments to 17 CFR 240.12g5-1; Paul Kiernan, *SEC Pushes for More Transparency From Private Companies*, WALL ST. J., Jan. 10, 2022, <https://www.wsj.com/amp/articles/sec-pushes-for-more-transparency-from-private-companies-11641752489>. Cf. Allison Herren Lee, Comm’r, SEC, Remarks at The SEC Speaks in 2021: Going Dark: The Growth of Private Markets and the Impact on Investors and the Economy (Oct. 12, 2021), <https://www.sec.gov/news/speech/lee-sec-speaks-2021-10-12> (text accompanying Commissioner Lee’s note 74) (SEC Commissioner advances regulatory thesis in the general area of inquiry); Hal Scott & John Gulliver, *Gary Gensler’s Assault on U.S. Capital Markets*, WALL ST. J., July 18, 2022 (“the SEC may limit the ability of private companies to raise capital from private-equity and venture-capital funds by effectively reducing the number of investors in private companies—a matter now on its official agenda”).

¹²⁰ The SEC term governs “nonaccredited investors.” Regulation D, Rule 501, 17 C.F.R. §230.501. The private firm is allowed up to 500 investors who are not accredited, a term that entails some sophistication in making investments.

not by the group as a single investor. A look-through would require more private firms to register as regulated public firms.

A justification for rolling back the existing private safe haven rule is that we have too few public firms. Hence, to propel regrowth in the public firm sector, it could be said, we should make larger private firms become public firms.¹²¹

The impact of the Article's thesis here is that, to the extent I.O. considerations drove down the number of public firms, the SEC has less reason to worry about securities regulation as tamping down the number of public firms. It's someone else's fault, not the SEC's. Even if Reg D is loosened, the number of public firms will not change by much if I.O. considerations are propelling the concentration. The rule change may be a good one, but the overall declining number should not weigh in heavily.

* * *

Even if over-regulation did not cause the halving, consequences still follow. Among them: The larger scale of enterprise alienates more people, making more people feel their stake in the system is unimportant. Even securities regulation needs could be affected, as a consequence and not a cause. Bigger firms' aggregate disclosure differs from that which small firms generate. Securities disclosure is based on materiality *to the firm*, not *to the economy*. Smaller firms disclose much about their business, often allowing analysts to fine-tune capital flows. With smaller firms becoming divisions of larger firms (even if it's for I.O., tax, and reasons other than securities regulation), less information flows to the public. And less information flows to potential competitors. Whether constricted flow is good or bad would need to be analyzed, in that constricted flow simultaneously increases progress (because innovative firms know they can keep gains because they keep their aims secret) and decreases it (because potential competitors are less well informed on whether to jump into the new market and analysts are less certain about where new capital should flow).

C. Corporate and Securities Law to Facilitate Competition

The Securities and Exchange Commission primary mission has long been to protect the stock-owning public.¹²² From that protection, capital markets could develop well, strengthening the American economy and American well-being.

When it has 500 or more investors, it must register as a public company and becomes subject to stricter reporting rules. Securities Exchange Act of 1934, § 12(g); 15 U.S.C. § 78l(g) (2017).

¹²¹ Cf. Lee, *supra* note 119 (text accompanying Commissioner Lee's note 30). Some may desire this result because public firms are more readily regulated for social impact.

¹²² U.S. Securities and Exchange Commission, Our Goals <https://www.sec.gov/our-goals>, *modified* Aug. 19, 2022 ("Goal 1. Focus on the long-term interests of our Main Street investors."); The Role of the SEC, U.S. Securities and Exchange Commission, <https://www.investor.gov/introduction-investing/investing-basics/role-sec> ("[The SEC] has a three-part mission: *Protect investors*; Maintain fair, orderly, and efficient markets; [and] Facilitate capital formation.") (emphasis added).

The SEC's core mission is not to protect and foster product market competition;¹²³ other governmental units do that. The analysis here of the I.O. Explanation thus leads to a hard institutional question. Capital costs and financial markets are intimately tied to the SEC's core mission.¹²⁴ Antitrust, industrial organization, and competitive product markets are not. Yet, the analysis here tells us that industrial organization intertwines with corporate securities regulation and the diminishing number of public firms. But issues such as seeking more competitive industrial markets are not the SEC's traditional mission.¹²⁵

There are good reasons for them not being central to that mission. First, it's inherently uncertain how to implement such a general goal—e.g., should it seek more public firms to compete with the bigger, already concentrated public firms? Or fewer but stronger firms when they initially go public? Or better-financed *private* firms to compete with all public firms? (On the latter, consider that the strongest competitor to Google's dominant search engine emerged recently as a privately-owned artificial-intelligence company. Second, strategizing on how to achieve this goal is just not within the SEC's expertise. It's hard enough for the full-time staff and commissioners at the FTC and the Antitrust Division to determine competition policy. It's unlikely that the SEC, without direction from the agencies more expert in this dimension, would be an appropriate agency for such inquiries.

The structural difficulty for the regulatory system is not whether the SEC has expertise here—it does not. The difficulty is that our regulatory system is modular—these agencies (FTC, Justice) deal with industrial organization, while other agencies deal with finance (the Federal Reserve, the Department of the Treasury, the Federal Deposit Insurance Corporation), and the SEC deals with securities markets. When the regulatory issues are modular, agency modularity can work. When the regulatory issues interconnect in strong, complex ways, however, our regulatory system faces new challenges. We show here that they connect: the SEC thought that corporate securities

¹²³ Still, the statute states that when the SEC must consider the public interest, “the Commission shall also consider, in addition to the protection of investors, whether the action will promote efficiency, competition, and capital formation.” Securities Exchange Act of 1934, § 3(f). But other than in fostering competition among brokers, this option does not figure strongly in the agency's view of its mission. Cf. *Our Goals*, *supra* note 122.

¹²⁴ John C. Coffee, Jr., *Law and the Market: The Impact of Enforcement*, 156 U. PA. L. REV. 229, 234–36 (2007); Merritt B. Fox, *Retaining Mandatory Securities Disclosure: Why Issuer Choice Is Not Investor Empowerment*, 84 VA. L. REV. 1335, 1379 (1999) (“the primary function of [mandated securities regulation] disclosure is . . . efficiency in the real economy, not investor protection”). Coffee argues that the allegedly greater burden imposed by U.S. securities laws and enforcement *lowers* the cost of capital and increases securities valuations.

¹²⁵ Compare Hester M. Peirce, We Are Not the Securities and Environment Commission—At Least Not Yet (SEC Comm'r statement, Mar. 21, 2022), www.sec.gov/news/statement/peirce-climate-disclosure-20220321; James D. Cox, Will It Float?: The Legitimacy of the SEC's Authority for Climate Risk Disclosures (Mar. 29, 2022), <https://clsbluesky.law.columbia.edu/2022/03/29/will-it-float-the-legitimacy-of-the-secs-authority-for-climate-risk-disclosures/>, and Andrew N. Vollmer, The SEC Lacks Legal Authority to Adopt Climate-Change Disclosure Rules (2021); with John C. Coates, Proposal on Climate-Related Disclosures Falls Within the SEC's Authority (June 22, 2022), <https://corpgov.law.harvard.edu/2022/06/22/proposal-on-climate-related-disclosures-falls-within-the-secs-authority/>, and Alexandra Thornton & Tyler Gellach, The SEC Has Broad Authority To Require Climate and Other ESG Disclosures (Center for American Progress Report, June 2021), <https://www.americanprogress.org/article/sec-broad-authority-require-climate-esg-disclosures/>. There's broad agreement that the SEC can mandate disclosure of climate-related risks that would have a major impact on the firm's business. The disagreement is over whether that authority extends to mandating disclosures that have little impact on the disclosing firm's business but a big societal impact.

regulation determined the number of public firms; we show why industrial organization is more likely to be responsible for the sector's reconfiguration.¹²⁶

On this issue—how to deal with the diminishing number of public firms—we advise the SEC to *stop* inferring from their declining *number* that there's a corporate securities regulatory problem. We cannot advise it to *start* taking industrial organization into account when regulating public and private markets—that is not part of its remit, nor part of its expertise. But that means that we are in the foothills of a significant regulatory design problem that we will in time need to surmount.

CONCLUSION

We examine the widely-stated observation that the number of public firms in the U.S. is declining precipitously and the closely related proposition that the public firm is becoming less important as the number of firms halved from their 1996 peak. We challenge this thinking of public firm sector decline by looking at the sector's total profit, total revenues, total investment, and total value. All of these attributes are either rising faster than the economy is growing or holding steady, despite the diminishing number of firms. Their profit, for example, roughly doubled as a proportion of GDP, even as the number of public firms nearly halved.

Public firms are as economically important as they were when their number peaked. That is the central claim and the central evidence in this paper. True, the reduced number of public firms can adversely affect investors' capacity to construct the portfolio that they want; the reduction can have other ill social effects. But reduced investment choice and other ill effects are not the same as the public firm sector diminishing in economic weight.

This combination of larger and more profitable but fewer firms calls for better explanation than the Legal Explanations can provide, and, although secondary to paper's main analysis, we bring forward potential Industrial Organization Explanations. That is, it's plausible for some to take the halving as evidence of over-regulation. Yes, we may have misdirected regulation, but the disappearance of 3,500 firms cannot readily be explained overall by the kind of securities regulation that is most costly for small public firms. That is, for half the firms to disappear, we need to explain why median-sized or larger firms in 1996 disappeared; but for firms of that size, the legal explanations are of limited importance. Hence, the halving should not be taken as in and of itself powerful evidence of misdirected securities regulation, as some seem to have done. FTC commissioners and Antitrust Division chiefs, in contrast, look at and worry about increasing economic concentration coming typically from fewer public firms. They pay little attention to the corporate and securities Legal Explanations. Antitrust and academic I.O. analysts view public firms' larger size as arising largely from efficiency, from economic reconfiguration, or possibly from weakened antitrust.

¹²⁶ Cf. Aneil Kovvali, *Stakeholderism Silo Busting*, 90 U. CHI. L. REV. 203 (2023) (stakeholderism is breaking down separate regulatory siloes of for antitrust, bankruptcy, corporate, and environmental law).

While we cannot in a single article definitively ascertain the role of industrial organization explanations for the precipitous decline in the number of public firms while their profits were doubling, we seek to set a research agenda. Our purpose is not to show that misdirected securities markets regulation had no role; our purpose is to show that one should not infer from the decreased number of firms that some heavy burden from securities or corporate law is *reducing the economic size of the public firm sector*. The public firm sector is just not weakening and much of the structural change, such as stable or rising profits, cannot readily be attributed to the Legal Explanations. Progressive policymakers worried about increasing corporate size have more evidence for their worries than securities law policymakers worried that excess securities regulation eliminated 3,500 firms, including many larger-sized firms for which the centrality of securities law burdens is implausible.

Toward that end, we have brought forward major I.O. explanations that compete strongly with the prevailing corporate securities regulation explanations. We have explored the Industrial Organization Hypotheses' likely relevance in explaining two overlapping phenomena. First, the actual reconfiguration of the public sector is one of more concentration, with public firms' profits, revenue, investment, and stock market value all persisting in size or rising in the past quarter century. This persistence or rise is in play even when we look beyond the largest technology companies, and even when we look beyond the S&P 500. Public firms and the public firm sector are not shrinking. The public firm is not disappearing. The I.O. Explanations can explain much of the public firm sector's reconfiguration, particularly for larger firms. It can explain public firms' persistent profitability, value, revenues, and investment; the Legal Explanations cannot. The Legal Explanations work best for smaller public, and potentially public firms; therefore, the disappearance of 3,500 firms, which must include more than the smallest firm, cannot in itself evidence a mis-directed corporate securities regulation thesis—that thesis must be established otherwise. A challenge for corporate law academics will be to ascertain how much each explanation contributes to the overall package of changes that we've seen over the past quarter-century and whether the declining number of firms is a phenomenon separate from rising profitability and value. Even if separate, the Legal Explanation vies with the Industrial Organization Explanations to explain the decline, both even for small public and potentially public firms. If it's a package, the Legal Explanation fades in relative importance.

There were more than 4,000 public firm mergers since 1996 and most did not involve small public firms for which the Legal Explanations could be particularly important. The distribution of merger size is something that the I.O. Hypotheses can explain but that the Legal Explanations cannot.

With our analysis in mind, policymakers at the SEC and corporate analysts can make better judgments of what is happening in securities markets, the public firm sector, and corporate and securities law regulation. Policymakers should downgrade the view that the public firm sector is shrinking due to major legal burdens, because the sector is just not shrinking. The altered structure may disrupt some portfolio strategies; but this is not as important as would be a broad contraction of the sector's real economic activity—and that economic contraction has just not happened. Moreover, the bigger picture policy concern could be whether we want stronger firms when they go public, or stronger private firms, to compete with the larger incumbents; which is better (or

whether either is better) is not deductively obvious or yet empirically shown. Lastly, the actual reconfiguration is one that fits some, often progressive, policymakers' concerns about size and scale, not corporate policymakers' concerns with a weakening of the public firm sector.

To understand the public firm sector's full role today, policymakers should look not only at the number of public firms but at basic measures of business prowess, like profit, total capitalization, profits, revenues, and investment. When they do, they will conclude that overall, the economic size, prowess, and economic importance of the public firm sector is not shrinking.

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