

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

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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, capital-raising rules for private firms were once very strict but have loosened up. Private firms can now raise capital nearly as well as small- and medium-sized public firms. Private firms are displacing public ones. Either way, these 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 by every other measure for the past quarter-century and, for several central qualities, has become much bigger: profits are up greatly over the past three decades, the market value of the public sector is also up greatly, and its revenue, investment, and employment are all steady. 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 by most measures and now make up more than 6% of the country's GDP, significantly 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. 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 roughly constant investment, revenue, and employment since 1996, but 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.*

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## INTRODUCTION

A major long-term strength of the American economy has been its deep capital markets and its concomitant 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 there were more than 7,000 public firms; by year-end 2022 that number had dwindled nearly to half, to fewer than 4,000. Fewer private firms went public. Many already-public firms disappeared—via merger, going private, or failure—but were not replaced.

We confirm the precipitous fall in the number of public firms. Private firms that once went public in droves have done so only sporadically in recent decades, with only occasional “good” years when many private firms go public. 2021 was a good year; 2022 was a “bad” one, with very few initial public offerings of stock by private firms. In this widely-shared dyspeptic perspective, a foundation of American economic success and people’s well-being is weakening.<sup>1</sup>

The proposition that public firms are disappearing—that the sector’s weight in the economy is diminishing—follows easily from the near halving of their number. But it’s a step that should not be taken. The *number* of firms has declined, precipitously.

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<sup>1</sup> A recent instance of a public business figure, Jamie Dimon, the CEO of JPMorgan Chase, lamenting the weakening of public stock market in the U.S. came in his letter to shareholders. In the letter’s 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 . . . .” The author noted the many disturbances executives report from public markets: too much corporate governance pressure (“a negative trend”); proxy advisors’ misguided actions and undue influence, the pressure to split the chair and CEO roles; quarterly reporting. 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.

But their collective economic *weight* is not falling. By multiple measures, the public firm sector is as important as ever. Public firms generate more profit than ever. They are much bigger on average now than before, and are concentrated in more industries. *Total* sales, investment, and employment for the past quarter-century, have grown as fast as the economy has been growing.

Thus, properly analyzed, we have fewer firms but collectively they are no less important economically than before. Three major reconfigurations have occurred, roughly simultaneously: profits have roughly doubled, as has the stock market's aggregate value, and the number of firms has nearly halved. The persistence in public firms' overall economic weight and profitability leads us to reassess the power and meaning of the legal explanations for the decline in number. American corporate and securities law is in fact supporting as much, or more, economic activity as ever. We emphasize the doubling of public firm profits. 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.

The explanations 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 as well as small- and medium-sized public firms can raise capital. In some critics' and policymakers' thinking, the rules are now too loose.

We then consider whether these legal explanations should be so central to understanding 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. The actual changes in the public firm sector—fewer firms, but a sector that is more profitable and more valuable—can be well-explained by real economy changes in recent decades that have little to do with securities regulation. We push forward plausible Real Economy, industrial organization explanations, as alternatives to (or additions to) corporate law factors.

Full analysis of these real economy explanations requires multiple researchers' efforts. We set forth a framework for why real economy shifts could better explain this package of public firm changes than the ascendant Legal Explanations, and we bring forward some evidence fitting better with the industrial organization explanation than with any Legal Explanation. The Legal Explanations can explain some of the changed structure of the public firm sector but not all of it, and maybe not even its most important features, like the doubling of profit. Its partial relevance cannot be denied, but its 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 has weakened, allowing more

mergers and concentration than before. This is a policy perspective popular in many public, political, and media circles, but one that is less vigorously supported in academic industrial organization work. The I.O. Hypothesis's second variety is that economies of scale and similar changes have made 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 in the United States during recent decades. These policy circles contemplate phenomena tightly connected to the SEC focus on the declining number of firms. But little crossover exists between these two policymaking groups and their academic correlates, even though the two talk about largely the same phenomenon. 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 Legal Explanations come in two varieties. The first variety is that the legal burdens of being a public company are too costly for many firms, so they 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 basic feature in common. They each see corporate securities law as the dominant driver for the declining number of public firms, not Industrial Organization.

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 fewer public firms and growing private firms mean that we are getting a smaller sector of publicly-traded firms. The idea that the public firm sector is shrinking is a natural corollary of their number diminishing, especially if the public firm were 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 became poor places to do business because of legal burdens, then the total profitability of the public firm sector—and not just the number of firms—should be shrinking as well. But profits are not declining.

Profits have nearly doubled and the total value of the entire stock market rose steeply during the very years that the number of firms was declining.

To repeat, the total profit of public firms—however measured—has increased since 1996, despite their declining number. And those profits increased faster than the economy grew. By this measure—its rising profits—the public firm sector became economically *more* important.

We then assess the popular view that newly dominant FAANG firms drive the change. But 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.<sup>2</sup> 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. Yet, 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 and driven down stock market value. But it did not. Something made the public firm sector *more* valuable and *more profitable than ever*.

It's plausible that the last quarter-century has been characterized by a package of three interrelated, simultaneous industrial organization changes—more profit, more value, and a diminishing number. We consider explanations for this plausible package of changes in Part III.

That is, the American public firm sector was transformed with a package of three simultaneous changes: fewer firms, more profitable firms, and more valuable firms. These three changes happened roughly simultaneously. The focus of legal analysis has been on a single change—fewer firms. But consider the possibility that the three constitute a *single* transformation of the public firm sector. If they are each part of a single process, then analysis should explain the triumvirate as a package. The Legal Explanations cannot. We bring forward Real Economy, industrial organization explanations that 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, 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 even as the number of firms halved since 1996 and that corporate and securities market regulators should accordingly reassess their basic views of public firm shrinkage. 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 the

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<sup>2</sup> See Part III.E.ii.

ramifications for SEC policy thinking if these Real Economy Explanations are dominant.

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 the number but on the metrics we bring forward—profitability, size of the stock market, revenues, investment, and employment. And if the reason for the declining number of public firms largely 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’s reducing the number of firms, that inference about the impact of legal regulation is incorrect, or weak. Securities regulation might be just right, and not too tight. Or ill-considered here and there, but not a particularly big problem.

\* \* \*

We then conclude. Corporate law policymakers and analysts have been apprehensive for years about the declining number of public firms. It’s natural for lawyers to emphasize legal explanations for phenomena. While corporate regulation surely plays a role, Industrial Organization ideas explain important trends in public firms that the Legal Explanations cannot explain. I.O. ideas fit better with the fact that the number of public firms halved, 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. Representative analyses plead 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.”<sup>3</sup> Jamie

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<sup>3</sup> 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 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.



Dimon's 2023 JPMorgan Chase letter to shareholders 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?"<sup>4</sup> 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.<sup>5</sup> By facilitating healthy risk-taking, says another commissioner, 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."<sup>6</sup> 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.<sup>7</sup> More Americans sense that they have a stake in 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, with the imputed trendline declining by more than half.<sup>8</sup> That decline leveled off by 2013.

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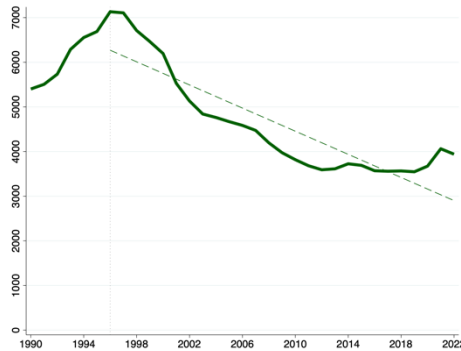
<sup>4</sup> See *supra* note 1.

<sup>5</sup> 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>.

<sup>6</sup> 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>.

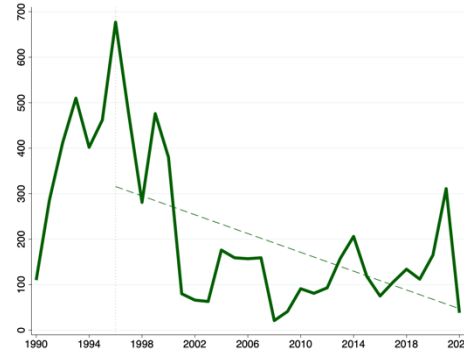
<sup>7</sup> Elad L. Roisman, Comm'r, SEC, Remarks at SEC Speaks: Encouraging Smaller Entrants to Our Capital Markets (Apr. 8, 2019), <https://www.sec.gov/news/speech/speech-roisman-040819>; Jay Clayton, Chair, SEC, Remarks at the Economic Club of New York (July 12, 2017), <https://www.sec.gov/news/speech/remarks-economic-club-new-york>. 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.

<sup>8</sup> 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, 1990–2022<sup>9</sup>**

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, 1990–2022<sup>10</sup>**

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.<sup>11</sup>

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

<sup>9</sup> 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.

<sup>10</sup> The IPO data comes from Jay P. Ritter's IPO database at <https://site.warrington.ufl.edu/ritter/ipo-data/>. A new channel for going public has emerged. Some public companies are organized with no operations. Their purpose is to acquire a private company. "Special purpose acquisitions corporations," or SPACs, became prominent in financial media. They acquired about 150 private firms in 2020 and 2021 but do not fall into the standard IPO data, and amounted to 300 "IPO-substitutes" for the total period. Including them would only dampen the downward trend but not reverse it. Results are summarized in the Appendix. Their rise does not explain the decline in IPOs well: SPAC acquisitions substitutes for IPOs, but they only became substantial in 2020, at the same time that the IPO numbers kicked up again.

<sup>11</sup> I.e., Amazon has issued 10.2 billion shares of stock. The stock traded at \$128 per share at the close of trading on September 2, 2022. Amazon's stock market capitalization was 10.2 billion x \$128, or \$1.3 trillion.

<sup>12</sup> 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.

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

## **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. Younger, smaller firms, it's said, do not want to absorb those costs and are deterred from going public. Influential financial media excoriate Sarbanes-Oxley and its purportedly negative impact on the public firm.<sup>13</sup>

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 and can do so without the burdens of being public.

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 commonly voiced, and the thesis prominently continues today.<sup>14</sup>

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

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<sup>13</sup> 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](https://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*, \_\_ BUS. LAW. \_\_ (forthcoming).

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. PERSP. 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); Christian Leuz et al., *Why Do Firms Go Dark? Causes and Economic Consequences of Voluntary SEC Deregistrations*, 45 J. ACCT. & ECON. 181, 192 (2008).

<sup>14</sup> 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).

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 initial public offerings has become even more top of mind for companies considering going public.”<sup>15</sup> 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 boosted by many policy analysts in the early interpretations of the Sarbanes-Oxley Act of 2002. With that statute, Congress responded to scandals at Enron and WorldCom with new requirements 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.<sup>16</sup> But the broad trend in the number of firms in Figure 1 fits the over-regulation thesis awkwardly, however. 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 the negative impact ascribed in the media and some academic circles.<sup>17</sup>

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 over the decades.<sup>18</sup> Private firms in need of 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.<sup>19</sup> In subsequent years, Congress and the SEC further expanded this category

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<sup>15</sup> Roisman, *supra* note 7 (emphasis added).

<sup>16</sup> 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.

<sup>17</sup> Cf. sources cited *supra* note 14. True, over-regulation adherents could ascribe the decline in the number of firms to a *baseline* of too much securities regulation, litigation, and enforcement that dates back to the 1930s’ passage of the two major securities acts. Sarbanes-Oxley, in this view, was incremental to the baseline, but it’s the baseline that counts. We do not seek to counter this broader view. Instead we seek to show that (i) descriptively the public firm has as much or more weight in 2022 as it did in 1996 and (ii) 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 or even that there’s been a weakening public firm sector.

<sup>18</sup> 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.

<sup>19</sup> 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.

of firms that need not register as public firms.<sup>20</sup> 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. These viewpoints are detailed in Appendix Table 1A. *All* who spoke advanced some form of the Legal Explanation, with about half of them finding the first legal explanation—over-regulation of public firms—to be important, while about half found the deregulation of private equity flows central.<sup>21</sup> Republican commissioners emphasize the regulatory burdens on the public firm. Democratic commissioners emphasize loosened regulation on private firms.<sup>22</sup> 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 a better source of financing for private firms than loans or private investments. That is, firms finance themselves from competing sources: bank loans, the bond market, private investors, and the stock market. Sometimes one source is less expensive, until markets even out prices. When the stock market is a better source of funding—because investors have pushed up the price of stock while borrowing is still comparatively expensive—owners of private firms sell stock into the

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<sup>20</sup> 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 regulation. Even if smaller public firms are burdened, private firms can now better step in to take their place.

<sup>21</sup> 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 advanced a thesis based on the organization of the IPO industry. Firms pay a fixed rate when going public, typically 7% of the value of the stock sold. This rate is not negotiated but can be seen as arising from investment bank cartel pricing. This fee, which applies only to the shares being offered, is smaller than what is paid to manage the sale of 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 prefer not to bother investing in small stocks. Marshall Lux & Jack Peard, *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](https://hks.harvard.edu/sites/default/files/centers/mrcbg/working_papers/86_final.pdf).

<sup>22</sup> Appendix Table 1A.

public stock market. In contrast, 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 market.”<sup>23</sup> 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.<sup>24</sup> 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 relatively attractive, compared to financing via private investment, bank borrowing, or the bond market? Investor sentiment can drive the stock market up. 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.<sup>25</sup>

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).<sup>26</sup> 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 predicted and pushed *more* firms to go public, not fewer. Hence, we put the Finance Explanation aside in our investigation. Something must be offsetting the upward push of the Finance Explanation.<sup>27</sup>

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<sup>23</sup> 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).

<sup>24</sup> 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 overoptimistic about the prospects for growing private companies, these firms go public to take advantage of the high-price opportunity).

<sup>25</sup> See Rajan & Servaes, *supra* note 23, 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.

<sup>26</sup> Shiller PE Ratio, <https://www.multpl.com/shiller-pe> (last accessed Sept. 4, 2022).

<sup>27</sup> 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.

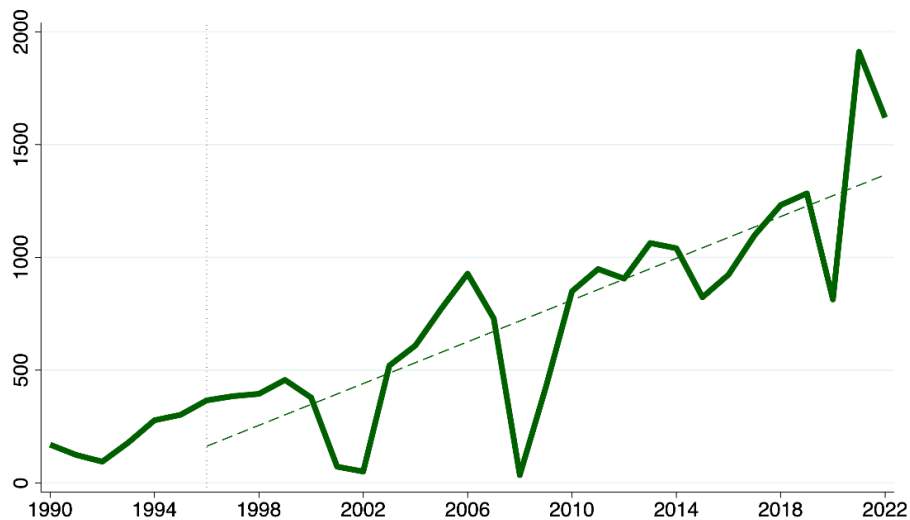
## II. BUT THE PUBLIC FIRM SECTOR HAS NOT HALVED IN PROFITABILITY OR SIZE

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 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 is not becoming smaller. Its business and economic role is as strong as ever. This strength can be seen in public firms' profits in the quarter century since 1996. The strength can also be seen in the public firm sector's overall market capitalization, which roughly doubled, as well as in its revenue, investment, and employment levels—all of which are roughly keeping pace with the economy's growth.

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

The near doubling of the public firm sector's basic profit in the past quarter century fits badly with the conception that the American public firm is in decline.<sup>28</sup> Net income rose from \$366 billion in 1996 to \$1.6 trillion in 2022. Figure 3 illustrates.



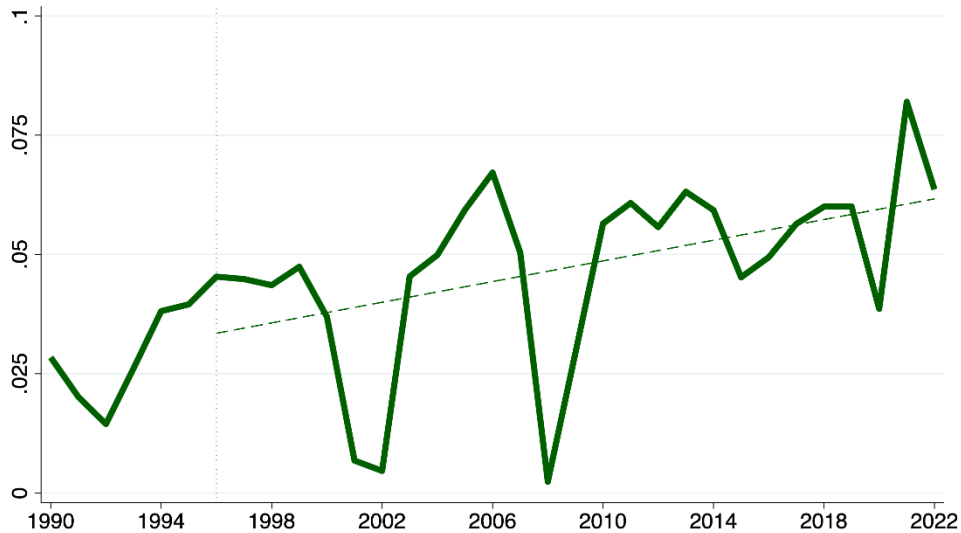
**Figure 3. Rising profitability of the American public firm sector, 1990–2022.<sup>29</sup>**

This figure shows the several-fold rise in net income 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.

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

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

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 and 6.4% in 2022, with the trendline imputing a doubling of income. Figure 4 illustrates.



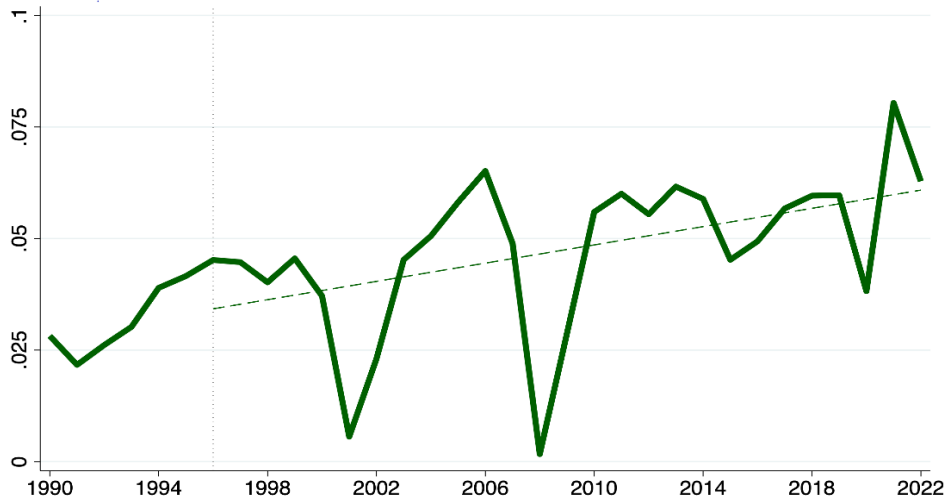
**Figure 4. Rising profitability of the American public firm sector, scaled to GDP, 1990–2022.**

This figure shows that public firms' net income rose substantially from 1996 to 2022, even as the number of public firms halved. The dashed line is the sharply rising 1996–2022 trendline. While the number of public firms halved (see Figure 1) and the number of IPOs declined (see Figure 2), 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 6.4% in 2022, with the trendline showing an overall doubling since 1996. (Profit figures for 2023 are nearly but not fully complete. The net income results reported thus far would have 2023 results sitting on the trendline in Figure 4.)

Other measures of profitability are often used in financial analysis, depending on the analytic purpose. But none of them shows a decline and nearly all show a similar sharp rise. For example, accounting conventions have adjustments 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 any extraordinary items. More centrally, a decline in the corporate tax, as the United States experienced after 2017, could push up post-tax profitability so much as to pull the entire trendline in Figure 4 up. But taxes fail to account for the sharp rise in profit, as Figure 6 demonstrates. It shows profits *before* tax expense of American public firms from 1990 to 2022, with a trendline from 1996 to 2022. The rise is more shallow than some other profit measures, but it is still a substantial rise 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

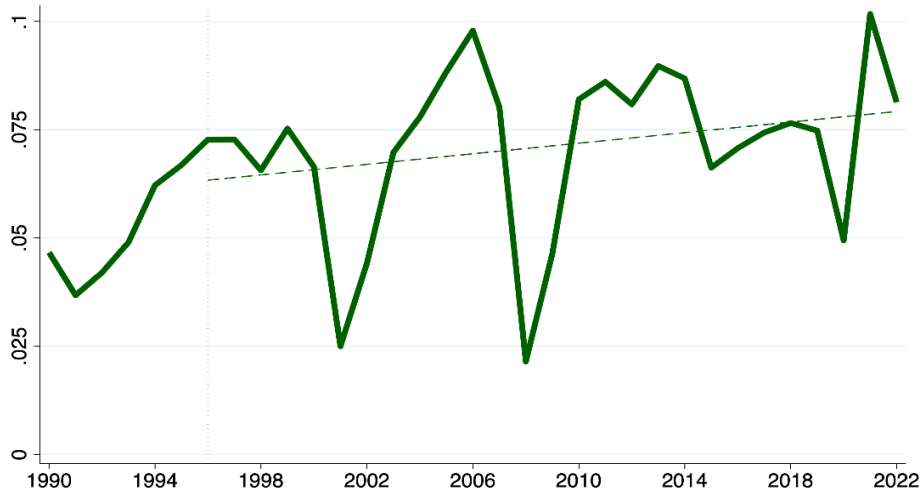


and indeed the trend for pre-interest income is flatter than the others; but it too did not halve like the number of firms. Even it stayed steady.<sup>30</sup>



**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, rose substantially from 1996 to 2022.



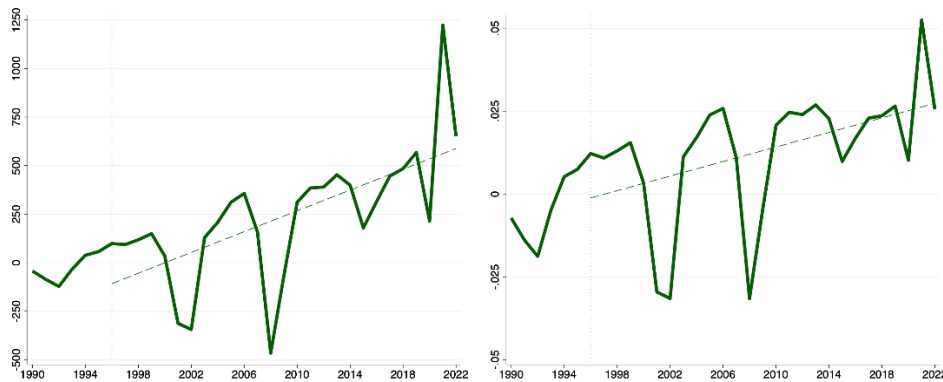
**Figure 6. Rising before-tax profitability, scaled to GDP, 1990–2022.**

This figure shows that public firm pre-tax profits 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.

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

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.<sup>31</sup> For example, if the public firm sector earned \$10 trillion in one year and then \$15 trillion in a later year, the comparison would have profits rising by 50%. If stock market investors invested \$20 trillion of capital on average in each year, and the benchmark opportunity cost of capital was 5% in the first year and 30% in the later year—which can occur either because interest rates or equity risk premiums have risen—then economic profit would have stayed the same at \$9 trillion. And if the benchmark opportunity cost of capital were 10% in both years, then economic profits would have increased 68%, from \$8 trillion to \$13 trillion.

Figure 7, this measure of economic profit shows a similar sharp rise while the number of firms was plummeting.<sup>32</sup>



**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.

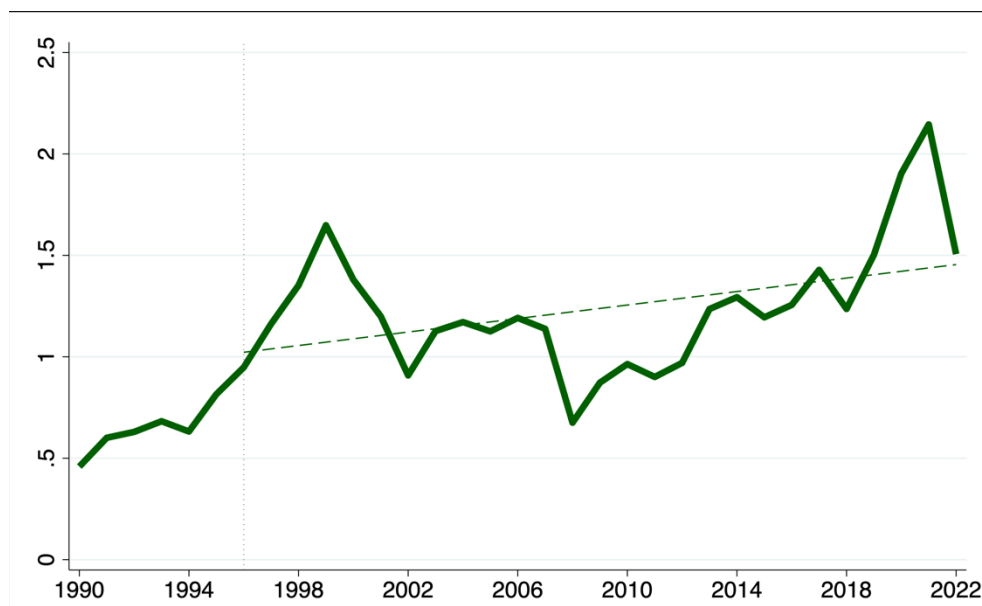
<sup>31</sup> Qiang Cheng, *What Determines Residual Income?* THE ACCOUNTING REV. 80 No. 1, 85–112 (2005).

<sup>32</sup> 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.<sup>33</sup>

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, 1990–2022<sup>34</sup>**

This figure shows the total value of the stock market steadily rising in the past three decades. The value of each company is obtained by multiplying the trading value of a share of stock by the number of the

<sup>33</sup> Cf. Cheffins, *supra* note 13, at 6, 22–24; Georgiev, *supra* note 18. See also Alperen A. Gözlügöl, 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 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 of (i) net income doubling (Figure 4), (ii) stock market value doubling (Figure 8), and (iii) the scale of the public firm rising greatly or holding steady by other measure. Corporate securities regulation cannot, we assert, explain that package. We focus on the entire public firm sector.

<sup>34</sup> Source: S&P GLOBAL MARKET INTELLIGENCE, <http://www.compustat.com> [<https://perma.cc/8WM8-MRHT>].

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. If interest rates fall, the stock market usually rises; and interest rates declined in the decade after the financial crisis, and only recently began to rise. And if the stock market is excessively optimistic about future profits—if there's a bubble—stock values will be high. Hence, the profitability measures we emphasize are stronger measures of change over time.

Other measures 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**

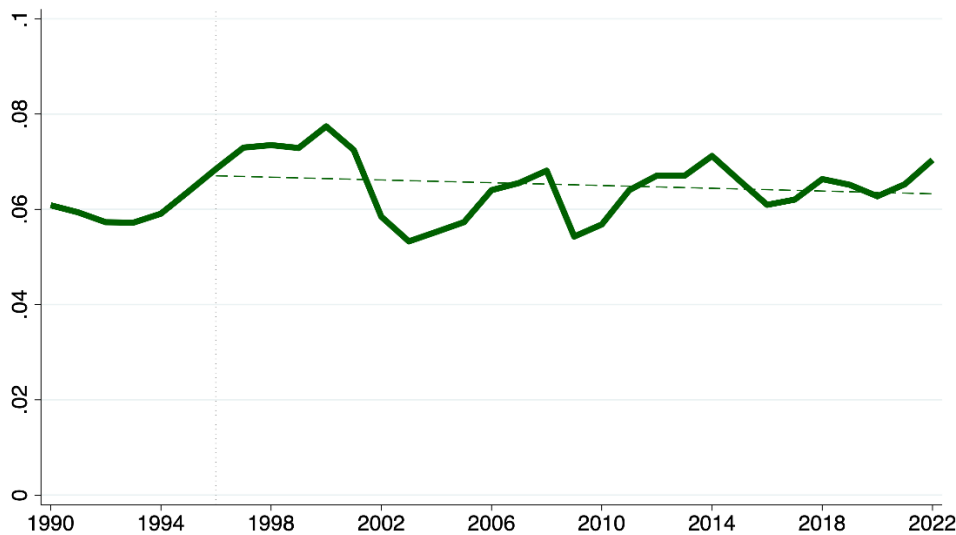
Consider investment levels. A worry in recent years has been that public firms are investing less than before.<sup>35</sup> If public firms are becoming fewer, then those fewer firms might invest less, making them less important to the country's economic future.

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. (Other intangible investments—like product brands—are harder to measure; hence, our measure is a lower bound for full economic investment.) In 1996 this spending on hard-asset investments 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 slightly downward and, as the number of public firms diminished, the fewer but bigger remaining firms invested somewhat *more*, at just over 7% of GDP in 2022.<sup>36</sup> Investment was slightly higher at the end than it was in 1996, even as the number of firms and the number of IPOs plummeted.

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<sup>35</sup> 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).

<sup>36</sup> 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, 1996-2022<sup>37</sup>**

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, held steady, and roughly kept up with the rate the economy was growing.

What about revenues? Public firms' revenues rose, keeping 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.) Revenue was steady.

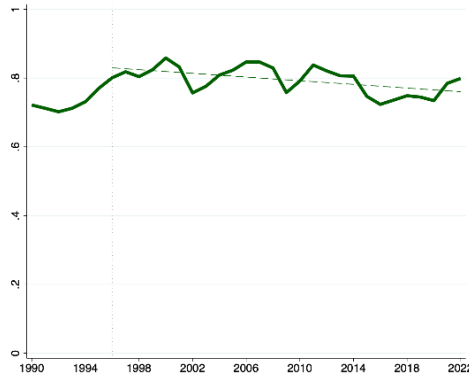
How about employment? It also was steady during this quarter-century. Figure 11 illustrates the slight rise.<sup>38</sup> (Public firms lost employment in the prior quarter-

<sup>37</sup> Source: S&P GLOBAL MARKET INTELLIGENCE, <http://www.compustat.com>.

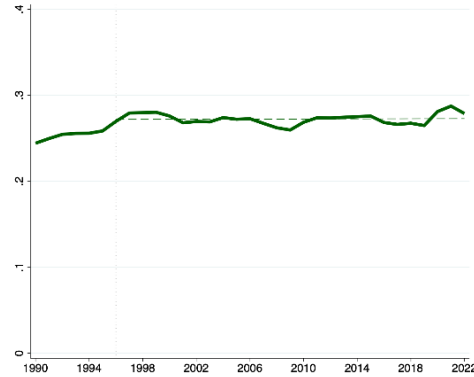
<sup>38</sup> *But see* Frederik Schlingemann & René Stulz, *Have Exchange-Listed Firms Become Less Important for the Economy?* 143 J. FIN. ECON. 927, 934 (2022). Schlingemann and Stulz find declining employment in the public firm sector, when compared to the 1970s. Most of the decline occurred in the 1970s and 1980s. 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 not listed or public, and service industries have become more important to the economy. The authors find public firm employment from 1990 to 2019 to be roughly stable as a percentage of total US employment. But public firms did globalize and some of that employment growth was outside the U.S. 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., even with the most stringent notion of employment, the decline in the number of firms was 2½ times larger than the decline in employment.

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 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.

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.<sup>39</sup> They have not meaningfully lost employment since.)



**Figure 10. Steady public firm revenue as a proportion of GDP, 1990-2022**



**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 during the quarter-century since the number of public firms peaked in 1996. Public firms halved in number, but not in profitability, value, investment, sales, and employment. Core measures doubled; other measures held steady. This is the central finding of this Article.

### III. THE POTENTIAL REAL ECONOMY, INDUSTRIAL ORGANIZATION EXPLANATIONS

Part II showed that while the number of firms plummeted, these firms became bigger individually, worth more collectively, and more profitable. In the aggregate, the nearly 4,000 public firms in 2022 play an economic role *greater* than that played by the 7,000 firms that were public in 1996. Profit and value are up substantially; other measures have held steady. The Legal Explanation explains this aggregate trend poorly.

We explore in this Part III “real economy” aspects of the public firm that could 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 public

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Two considerations are relevant. First, the number of public firms decreased during this era, which would, all else equal, tighten the supply chain. That would make the weight of the public firm sector heavier, on this score, than the overall trend line. Secondly, each measure that we study imperfectly indicates 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.

<sup>39</sup> *Id.*

firm sector, 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—could contribute to explaining that halving.

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

### A. Industrial Organization and Antitrust

While many economists see industrial concentration as having increased markedly in recent decades,<sup>40</sup> analysts differ on why. Some major academic work and many progressive antitrust policymakers<sup>41</sup> see competition as declining as American industry became more concentrated. The proponents of the antitrust perspective point to rising corporate profits that are not competed away, to the apparently rising markups (as firms free from tight competition sell for a higher multiple of their costs),<sup>42</sup> and to declining dynamism.<sup>43</sup> “Profits have risen as a share of GDP. This [rise] . . . points to a [parallel] rise in . . . excess profits earned by firms whose positions are protected by high barriers to entry. . . . [One wonders] why competitive forces have not (yet?) . . . erod[ed] these profits.”<sup>44</sup>

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<sup>40</sup> 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 35; 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.”).

<sup>41</sup> 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://obamawhitehouse.archives.gov/sites/default/files/page/files/20160502_competition_issue_brief_updated_cea.pdf) [<https://perma.cc/3XR8-QCCM>]. The weakened antitrust explanation is more popular in policymaking, political, and media circles than it is in academic work.

<sup>42</sup> 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 2020]”); Philippon, *supra* note 35, at 54 (profits are a steeply rising share of GDP); 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>].

<sup>43</sup> Philippon, *supra* note 35, at 9–10, 51–56; Shapiro, *supra* note 42, at 70–72.

<sup>44</sup> 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. An abstraction shows why: Posit an economy with ten industries divided among 20 firms, each of which has 5% of each industry. There is good competition and low concentration in every industry. Each firm is in 10 industries, with 5% of each market. 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 they’re less competitively structured, because there’s now one monopoly. More firms, less competition. Each of the original 20 large firms is about 5% smaller.

Multiple policymakers, media proponents, and some academic analysts blame weakened antitrust policy for rising industrial concentration. They particularly blame the 1980s' weakening of merger guidelines,<sup>45</sup> leading the Federal Trade Commission and the Department of Justice's Antitrust Division in 2022 to consider restrengthening them.<sup>46</sup> These two government units were motivated by "evidence . . . that many industries across the economy are becoming more concentrated and less competitive."<sup>47</sup> The FTC chair says that "decades of mergers have been a key driver of consolidation."<sup>48</sup> The Attorney General and the head of the Justice Department's Antitrust Division think that "too many industries have become too consolidated over time."<sup>49</sup> Between 1996 and 2020, approximately 4,000 mergers between public firms 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.<sup>50</sup>

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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.*

<sup>45</sup> 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).

<sup>46</sup> 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> ("agencies launch joint public inquiry aimed at modernizing merger guidelines to better detect and prevent anticompetitive deals").

<sup>47</sup> *Id.*

<sup>48</sup> 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 the loosening could still have accounted for the diminishing number of firms, rising profits, and rising value of the public firm sector.

<sup>49</sup> 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](https://www.justice.gov/opa/speech/assistant-attorney-general-jonathan-kanter-delivers-remarks-modernizing-merger-guidelines#_ftnref2).

<sup>50</sup> B. Espen Eckbo & Markus Lithell, *Merger-Driven Listing Dynamics* 8–9 (ECGI Finance Working Paper No. 752, Jan. 2022), [www.ssrn.com/abstract=3547581](http://www.ssrn.com/abstract=3547581); Gabriele Lattanzio, William L. Megginson & Ali Sanati, *Dissecting the Listing Gap: Mergers, Private Equity or Regulation* (SSRN working paper, 2022), [www.ssrn.com/abstract=4198755](http://www.ssrn.com/abstract=4198755). 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.



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

A lax antitrust explanation has a progressive appeal that could modulate some (progressive) SEC commissioners' thinking, especially those who see the public firm as embodying public, social values.<sup>51</sup> That is, progressives could see the reigning public firms as not just embodying values of openness and transparency (compared to private firms) but as resulting from unwholesome mergers of public firms. Progressives could worry about a related pressure: the growing scale of public firms that we documented in Part II 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, securities regulation's harshness for public firms, or a new laxness for private ones) for substantially similar phenomena—increased concentration and fewer public firms—seems to us 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.

Much academic literature points to other I.O. developments that can explain the reduced number of public firms: rising economies of scale, extended networks, and the growing importance of winner-take-all skill, foresight, and industry success. There's substantial Schumpeterian turnover among the most profitable firms, consistent with market power arising but then eroding.<sup>52</sup> And there's significant foreign entry to concentrated U.S. industries.<sup>53</sup>

1. *The new networks.* Increased concentration can be the efficient result of *intensified* competition.<sup>54</sup> New technologies, frequently sheltered by patent protection, often allow only one firm in an industry.<sup>55</sup> Other monopolies arise from network

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<sup>51</sup> 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).

<sup>52</sup> See Murray Z. Frank & Jing Gao, *The Changing Structure of Corporate Profits* 29 (working paper, Jan. 9, 2024), [www.ssrn.com/abstract=4680033](http://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).

<sup>53</sup> Mary Amity & Sebastian Heise, *U.S. Market Concentration and Import Competition*, REV. ECON. STUD. (forthcoming).

<sup>54</sup> Susanto Basu, *Are Price-Cost Markups Rising in the United States? A Discussion of the Evidence*, 33 J. ECON. PERSP. 3, 3 (2019) ("industrial concentration can [come from] more efficient firms . . . gain[ing] market share"); Shapiro, *supra* note 42, 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%202020.pdf](http://www.kansascityfed.org/~media/files/publicat/sympos/2018/papersandhandouts/jh%20john%20van%20reenen%20version%202020.pdf).

<sup>55</sup> Autor, Dorn, Katz, Patterson & Van Reenen, *supra* note 44, 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?* J. POL. ECON. (forthcoming) (MS at 3) (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).

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.<sup>56</sup> Facebook is an archetypal network monopoly.<sup>57</sup>

FTC commissioners emphasize the importance of network effects on increasing economic concentration.<sup>58</sup> “[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 an incumbent who can only be dislodged by a superior product or a significant cost advantage.”<sup>59</sup>

2. *Scale economies.* Others see much of the new concentration as coming from old-fashioned economies of scale<sup>60</sup> with higher fixed costs today.<sup>61</sup> Once the production facility and its concomitant technology are built, the enterprise can supply much of the demand for the product with low variable costs.

Steeply rising economies of scale are making firms bigger, according to much mainstream economic analyses. These bigger firms compete, in the standard analyses, albeit on a larger scale. The cost of today’s upfront investment, in this understanding, is a higher fraction of a product’s final value than it used to be. More costs today are embedded in the big initial investment in factories, patents, and organizational capital.<sup>62</sup> This is a common explanation for the increasing size and concentration of American firms:<sup>63</sup> the larger efficient scale means the industry can only support three firms instead

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<sup>56</sup> 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://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 GAFA*, in DIGITAL DOMINANCE: THE POWER OF GOOGLE, AMAZON, FACEBOOK, AND APPLE 21, 26 (Martin Moore & Damian Tambini eds., 2018).

<sup>57</sup> 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).

<sup>58</sup> 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](http://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](http://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](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.

<sup>59</sup> 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](http://www.ftc.gov/system/files/documents/public_statements/1517972/phillis_-_we_need_to_talk_0519.pdf).

<sup>60</sup> Berry et al., *supra* note 56, 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”).

<sup>61</sup> *Id.*, at 54.

<sup>62</sup> Basu, *supra* note 54, 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 42, at 603.

<sup>63</sup> Berry et al., *supra* note 56, at 48, 54.

of six—leading to fewer public firms. Competition today, in this view, demands scale and high markups.<sup>64</sup>

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.<sup>65</sup> Similarly, rising regulatory fixed costs in recent decades, such as environmental, safety, and organizational requirements, have been brought forward as pressing firms to be larger, to be able to spread those fixed costs over a wider base.<sup>66</sup> Basic regulatory costs are estimated at nearly double per employee for small firms over large firms and this kind of differential is said to explain one-third of the rise in concentration in recent decades.<sup>67</sup>

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 that large, public firms cannot.<sup>68</sup> But if that small firm develops a successful technology, they must get big fast to profit from it.<sup>69</sup> 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 and distribute their discovery.<sup>70</sup>

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.<sup>71</sup> Superstar firms emerge from winner-take-all competition.<sup>72</sup>

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<sup>64</sup> Cf. Chad Syverson, *Macroeconomics and Market Power: Context, Implications, and Open Questions*, 33 J. ECON. PERSP. 23, 27 (2019) (“reductions in trade, transport, or search costs . . . shift[] activity away from smaller, higher-cost producers and toward larger, lower-cost producers”).

<sup>65</sup> Maarten de Ridder, *Market Power and Innovation in the Intangible Economy*, 114 AM. ECON. REV. 199 (2024).

<sup>66</sup> James B. Bailey & Diana Weinert Thomas, *Regulating Away Competition: The Effects of Regulation on Entrepreneurship and Employment*, 52 J. REG. ECON. 237 (2017).

<sup>67</sup> Shikhar Singla, *Regulatory Costs and Market Power 1*, 4 (Stan. Bus. School working paper, 2023).

<sup>68</sup> Jonathan M. Barnett, “Killer Acquisitions” Reexamined: Economic Hyperbole in the Age of Populist Antitrust 6–7 (SSRN working paper, Mar. 28, 2023), [www.ssrn.com/abstract=4408546](https://www.ssrn.com/abstract=4408546).

<sup>69</sup> E.g., Xiaohui Gao, Jay R. Ritter & Zhongyan Zhu, *Where Have All the IPOs Gone?* 48 J. FIN. & QUANTITATIVE ANAL. 1663 (2013).

<sup>70</sup> Cf. Ronald J. Gilson, Charles F. Sabel & Robert E. Scott, *Contracting for Innovation: Vertical Disintegration and Interfirm Collaboration*, 109 COLUM. L. REV. 431 (2009).

<sup>71</sup> Bessen, *supra* note 56, 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>].

<sup>72</sup> Autor et al., *supra* note 44, at 649. A related I.O. explanation is that the rising importance of intangibles and technological capacity is changing the relative efficiency of going public for technological firms. For more new firms, close ownership and direct information flows to stockholder-owners could be especially important. Disclosure

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.<sup>73</sup> (This too, we emphasize, is a real economy, industrial organization effect, and not a securities regulation effect.) Smaller public firm manufacturers disappeared, 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 firms standing alone. But if the overall package of changes in the past quarter-century needs to be explained is an interrelated related, 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 have been better able to capture extra profit over time they can take advantage of economies of scale (or can overcome competition).<sup>74</sup> In Figures 3 through 6, 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. For example, 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.<sup>75</sup> If over-regulation is hurting firms with publicly-issued securities, one would not expect their net income to have doubled.

Indeed, the evolution of economic profits, presented in Figure 7, provides separating evidence. As we explained, our measure of economic profits 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 have as a whole have 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.<sup>76</sup> While

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obligations could be more costly for such firms. On the latter, see Daria Davydova, Rüdiger Fahlenbrach, Leandro Sanz & René M. Stulz, *The Unicorn Puzzle* (working paper, Nov. 2022), [www.ssrn.com/abstract=4255165](http://www.ssrn.com/abstract=4255165).

An intersection between I.O. and law, but not corporate law, is possible. Patent holders diminished power to obtain immediate injunctive relief is said to have weakened the stand-alone technological firm. Barnett, *supra* note 68, at 45 (pointing to the Supreme Court's 2006 *eBay* decision).

<sup>73</sup> See Robert Feinberg, *International Competition and Small-Firm Exit in US Manufacturing*, 39 *EASTERN ECON. J.* 402 (2013).

<sup>74</sup> Or assert monopsony power to their lower labor costs. See Simcha Barkai, *Declining Labor and Capital Shares*, 75 *J. FIN.* 2421, 2422 (2020); Autor et al., *supra* note 44 (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.

<sup>75</sup> 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.”

<sup>76</sup> 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

Legal Explanations are consistent with some big firm trends (and, hence, cannot be ruled out as irrelevant), the I.O. Hypotheses explain more. For example, the Legal Explanations cannot explain why the public firm sector is according to most measures so much more profitable.

Several important works in academic finance conclude that U.S. mergers increased since 1996 much more than mergers in other economically advanced nations.<sup>77</sup> An American public firm was *three times more likely* to merge with another American public firm than was a European or Japanese public firm.<sup>78</sup> 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 account for about 2,500 of the 3,000-firm decline.

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 firms and even other large firms (for which the Legal Explanation fits poorly). Only about 561 of the 4,000+ public firm mergers since 1996 involved acquisitions of small public firms.<sup>79</sup>

Large public firms acquired many more other *large* public firms than small public firms, as Figure 12 illustrates. Hence, a noticeable fraction of excess U.S. mergers, and, hence, a noticeable fraction of the public firm reduction, fit 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-sized and other large

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“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).

<sup>77</sup> 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 50; Lattanzio, Megginson & Sanati, *supra* note 50.

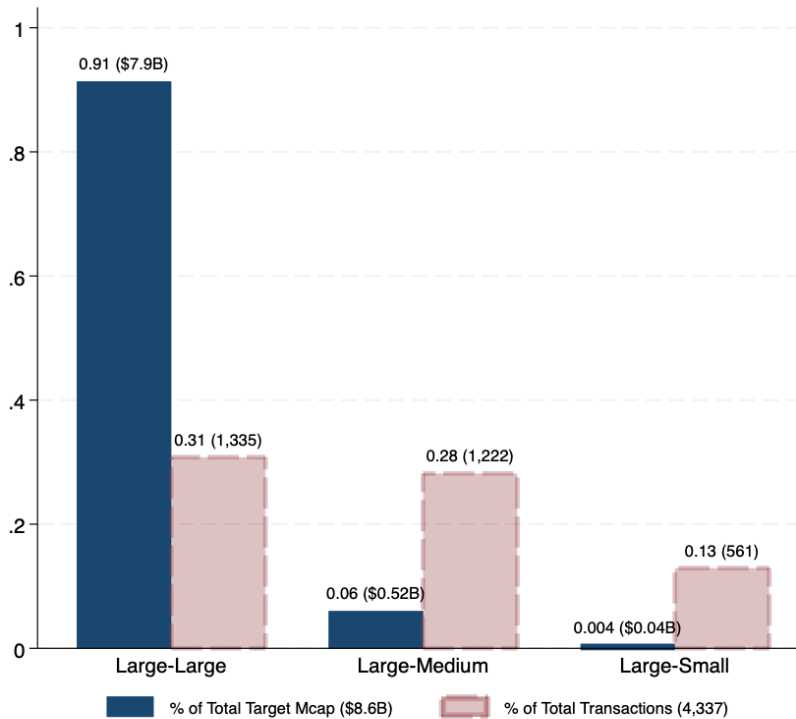
<sup>78</sup> Eckbo & Lithell, *supra* note 50, at 47 (fig. 8). The additional number of U.S. mergers above that for eign baseline accounts for most of the U.S. decline in number of public firms. *Id.*; Lattanzio, Megginson & Sanati, *supra* note 50.

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 now incentivize executives 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).

<sup>79</sup> 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.

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 regulatory theses can best explain. (We also measure this distribution through a simple 50-50 split of large and small firms and a full distribution of acquisition counts and target firm capitalization by acquiror and target size. These are in Appendix Figure 5 and Appendix Table 3. They point in the same direction: many more larger firms merging with larger firms than large firms merging with small firms. The Legal Hypotheses gain little support from an examination of the quarter-century distribution of merger size among the 4,000+ mergers.)



**Figure 12. Large Firms Acquired More Large Public Firms than Small Public Firms, 1996-2022<sup>80</sup>**

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. 94% of the total dollar-value of mergers were in mergers of larger firms with large firms.

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.

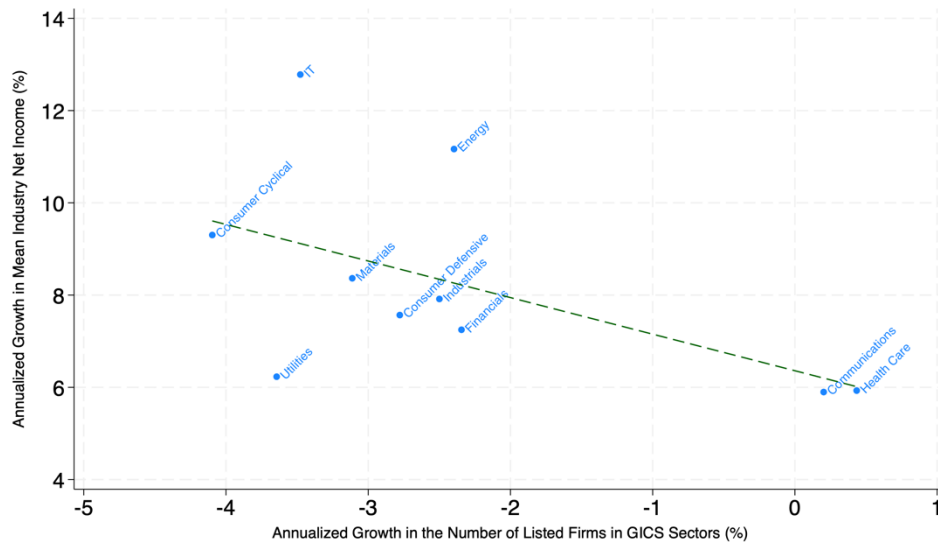
The three right-hand, red bars show the percentage of public firm mergers for the category and their number (in parentheses). Large firms merging with *other large* firms accounted for 31% of the number of mergers. As the red right-hand bar farthest to the right shows, the number of small firms that 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

<sup>80</sup> 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 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).

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. More than 2,500 of the mergers involved firms larger than the bottom one-third of public firms.

Further evidence fits better with the I.O. Hypotheses than with the Legal Hypotheses. The industries where the number of public firms diminished the most post-1996 were those whose average profits rose the most; the industries where the number of firms did not diminish or diminished the least substantially 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 the same across industries. Profitability and industrial concentration correlate, as Figure 13 shows.



**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 the industries to the right increased; the number of firms in the industries to the left decreased. The 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/>; 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](http://www.federalreserve.gov/econres/notes/feds-notes/a-note-on-industry-concentration-measurement-20230203.html).

5. *Public policy contrasts.* Consider Washington policy announcements, not to discover the true reasons for the reconfiguration of the American public firm, but as a contrast with the SEC's perspective.

In 2022, the Democratic-controlled FTC signaled that it would challenge more mergers. That higher chance of an FTC challenge alone induced firms to forgo mergers that previously would have gone forward.<sup>81</sup> That presumably will dampen the decline in the number of public firms. Antitrust critics say that more of large public firms' many acquisitions in recent decades should have been challenged.<sup>82</sup>

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

The central discourse on the diminishing number of firms posits that it's the diminished number since 1996 that 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. That high valuation attracted more public offerings, which added to the numbers of public firms. The bubble in valuation eventually burst and with it the number of public tech firms decreased. Or so the conjecture goes.

While plausible that the dotcom bubble burst reduced the number of firms,<sup>83</sup> 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 while the number of firms nearly halved. Second, the dotcom bubble mostly refers to extraordinarily high dotcom *valuations*, not to an unusually high *number* of 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.<sup>84</sup> A drop of 800 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 overall number of public firms peaked near the beginning of the period (in 1996) and started declining before the dotcom peak.

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<sup>81</sup> Dave Michaels & Ryan Tracy, *FTC's Antitrust Posture Spurs Companies to Rethink Mergers*, WALL ST. J., Aug. 16, 2022, at A1.

<sup>82</sup> JONATHAN B. BAKER, *THE ANTITRUST PARADIGM: RESTORING A COMPETITIVE ECONOMY* 14–17 (2019); Colleen Cunningham et al., *Killer Acquisitions*, 129 J. POL. ECON. 649, 655 (2021); *see also* John M. Barrios & Thomas G. Wollmann, *A New Era of Midnight Mergers: Antitrust Risk and Investor Disclosures* 31 (Nat'l Bureau Econ. Rsch., Working Paper No. 29655, 2022).

<sup>83</sup> *Cf.* Blair, *supra* note 37, 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”).

<sup>84</sup> See Appendix Figure 8.



## D. Governance Improvements, Public and Private

We have been arguing 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. Another I.O. possibility is that the life cycle of the small firm altered over time, leading to decreased demand for small public firms.

1. *The holding pen.* Here's what we mean. Posit that successful private firms once went public but were often unstable. Some 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 with the missing capacities. Some small public firms failed, closed, or delisted.

Consider next the possibility that financing and governance capacity in private firms improved such that the kind of firm that formerly went public, seeking to merge with a large public firm, can 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.<sup>85</sup>

The private-to-public via merger process in this account approximates what it always has been, but eliminates one former step, namely, the firm's temporary existence as a small public firm. This development helps to explain the decrease in the number of small public firms: they were originally in this analysis only temporary and in transition; that transition from standalone and private to being a division of a public company is now done directly. This private-to-public acquisition channel suggests that little changed on-the-ground—just a more direct channel than there had been for public firms' two-step acquisitions of private firms. This conceptualization contradicts the idea that more private firms are permanently staying private; many still move into the public sector, but they do so directly, by being acquired by public firms.

2. *Rising intangibles in private markets.* More firms today depend on the quality of their intangible investments than before, when manufacturing was dominant.<sup>86</sup> 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. Such firms are more likely to remain private, with more close, hands-on private owners than previously.<sup>87</sup> 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 than ever. Something must be pushing back to keep

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<sup>85</sup> Cf. Cheffins, *supra* note 13, at 21; de Fontenay, *supra* note 18; Frank Partnoy, *The Death of the IPO*, THE ATLANTIC, Jan. 11, 2020.

<sup>86</sup> 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.

<sup>87</sup> René M. Stulz, *Public versus Private Equity*, 36 OXFORD REV. ECON. POL'Y 275, 280–81 (2020); Doidge, Kahle, Karolyi & Stulz, *supra* note 77; 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.

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.<sup>88</sup> 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 that the public firm would decline, due to this managerial dysfunction.<sup>89</sup> 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.<sup>90</sup> If their governance has deteriorated, for which there's evidence, then the opposite has occurred.<sup>91</sup>

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.<sup>92</sup> Pension funds that might previously have invested only in public securities, real estate, and loans, now can make significant private equity investment.

We have no doubt that this rising capacity for private financial channels to operate effectively 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 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. We do seek here to evaluate the relative strengths and weaknesses of public and private markets, or even to definitively measure their relative size. Important work shows the growth of the financial markets' capacity to finance private business.

Our focus is on how public firms by all important measures other than their number persist in their importance to the economy during the past quarter-century.

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<sup>88</sup> Michael C. Jensen, *Eclipse of the Public Corporation*, HARV. BUS. REV., Sept.-Oct. 1989.

<sup>89</sup> *Id.*

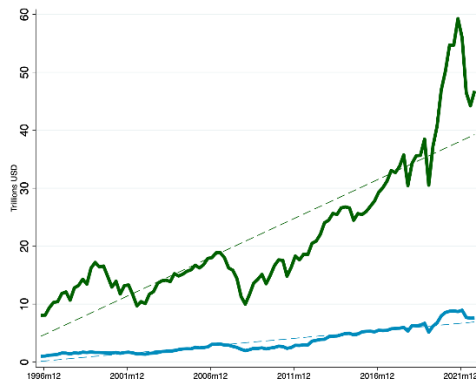
<sup>90</sup> Cf. Cheffins, *supra* note 13, at 3 (strength of private companies' boards).

<sup>91</sup> Elisabeth de Fontenay, *Private Equity's Governance Advantage: A Requiem*, 99 B.U. L. REV. 1095 (2019).

<sup>92</sup> Cf. Kathleen M. Kahle & René Stulz, *Is the US Public Corporation in Trouble?* 31 J. ECON. PERSP. 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.

From that showing, we evaluate implications on securities regulation policy. We are not focused on the relative weight of public and private financial markets, although that is an important and related subject. The growth of private finance has indeed been substantial, with many more unicorns—billion-dollar firms—today than before, and with 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 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 sharply greater.<sup>93</sup>



**Figure 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**

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>.<sup>94</sup>

<sup>93</sup> 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](http://www.ecineq.org/wp-content/uploads/papers_EcineqLSE/EcineqLSE-218.pdf).

<sup>94</sup> The data on all domestic private firms' equity market values 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

To buttress our 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, as measured by revenue, are still public companies. Of the top 500 American companies by revenue, 80% are public firms.<sup>95</sup>

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 until another four centuries have passed. See Figure 15.

In another dimension, the private financing channels' strength is often measured against public firm capital-raising. While private firms may well raise more capital than public firms, this difference 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. This is an important subject for future inquiry.

Lastly here, we note a possible similarity between the public firm and the private firm sector. If economies of scale are driving the growth (and sharply rising profitability) of public firms, then they might be doing the same for private firms. While we seek here to show the explosive profitability and growing size of the public firm sector, we note that industrial organization developments, such as 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. Unicorns are no longer rare. Like the growth of large public firms, the private firm sector's largest firms are larger today than they once were. Some are formed via the amalgamation of smaller private firms.

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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 and that rise helps explain the growth of both the public and private business sectors. The results suggest across-the-board growth, consistent with the central claim in this article—namely, that the public sector is not declining in any dimension other than number of firms.

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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.

<sup>95</sup> 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](http://www.ssrn.com/abstract=2682841).

## E. Pushbacks on the Industrial Organization Ideas We Advance

Several considerations could weaken this Article’s main thesis—that public firms, by every measure other than the number of firms, are as important in 2022 as they were in 1996. Other considerations could weaken the secondary features of this Article, such as the prospect that 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 has globalized greatly in the past 25 years. Is the continued strength of the stock market 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.<sup>96</sup> Still, U.S.-sourced pre-tax profit was steady since 1996 while foreign-sourced pre-tax profit rose. The Appendix figures illustrate.<sup>97</sup> And globalization is itself an aspect of industrial organization.

But recall our central policy inquiry: is the view, common at the SEC, that public firms are weakening, suggesting that burdensome securities regulation (or weakened private firm regulation) is the culprit. Properly interpreted, this data on rising foreign-source income should weaken these SEC-based propositions: (i) those newly globalized business segments of American public firms could have been owned privately or (ii) they could have been owned by companies originating outside of the United States. In 2022, however, they are owned by America’s stock market investors. American-based public firms, subject to American corporate securities regulation, and they are more economically important than ever.

The Legal Explanation anticipates that the burdens of regulation 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 very high stock market capitalizations. Could their growth *alone* explain the core results—that the public firm sector is more profitable in 2022, with fewer than 4,000 firms today, than it was in 1996, with 7,000 firms?

To check this possibility, 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 persisted without any of the FAANG companies.<sup>98</sup> (And, even if it did, this would identify the I.O. change, not contradict that there was one.) Even when we excluded the largest companies—the S&P 500—the

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<sup>96</sup> 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.

<sup>97</sup> 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.

<sup>98</sup> Appendix Figure 2. A FAANG focus is not inconsistent with industrial organization, antitrust inputs to the growth of the public sector. Cf. Eric Posner, *The Monopolists Fight Back*, PROJECT SYNDICATE, Nov. 23, 2023.

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.<sup>99</sup>

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."

However, 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 are going 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 be aberrational, subtracting it would flatten the trendline even more and show IPO proceeds *as rising*.<sup>100</sup>

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 if the dot.com boom were part of that trendline.

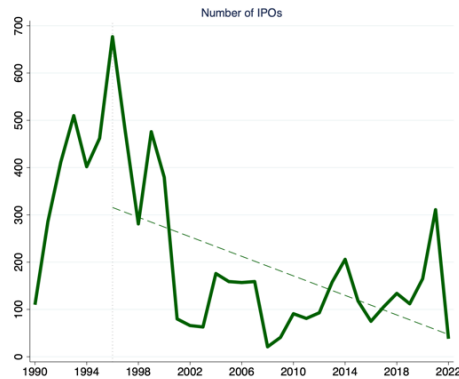
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<sup>99</sup> Appendix Figures 3 and 4. We also examined the relative growth of small and large firms. The smallest firms, which would be among those most sensitive to the costs associated with the Legal Explanation, grew. But the bigger firms—many of which were products of the biggest mergers—grew more. Appendix Table 2 illustrates.

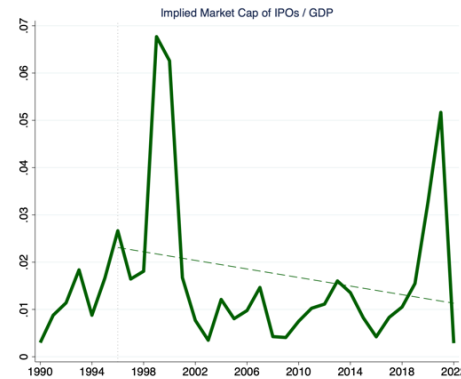
Corporate investment, however, slightly concentrated. Although it rose in the public firm sector overall, total investment slightly increased in the S&P 500 firms but slightly decreased in the smaller non-S&P 500 firms.

<sup>100</sup> 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 of later stage, larger private companies has been noticed before. We are unaware of prior measurement, however—i.e., the trend line shows as much value (as measured by stock market capitalization) moving from the private to the public market via IPOs in the later period as in the earlier. And if we include direct purchases of private firms by public firms, the numbers increase further.



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



**Figure 17. IPO's value, scaled to GDP, 1990-2022<sup>101</sup>**

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 those years; 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., without 2022, the trendline for market capitalization would have a positive slope.

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.

The Legal Explanation potentially works here in explaining the IPO decline. *If* the decrease in IPOs is not part of the big trend—bigger, more profitable, and more 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.<sup>102</sup> 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.<sup>103</sup> 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 *if* the IPO trend is largely independent of the reconfiguration

<sup>101</sup> Source: Ritter, *supra* note 7. Lattanzio, Megginson & Santi, *supra* note 50, 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—is as important as the former. Better private financing has not, they find, diminished the net number of public firms.

<sup>102</sup> 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).

<sup>103</sup> 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.

package. 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.<sup>104</sup>

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.<sup>105</sup>

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.<sup>106</sup> 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 this kind of access through their pension funds. Third, the common belief that excess returns are available from private investing is not yet supported by powerful evidence.<sup>107</sup>

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?

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<sup>104</sup> Appendix Table 5 (top panel). This increase fits both the I.O. Hypothesis and the Legal Explanation. The observations here on IPOs parallel the thinking in Part II, that public firms are growing by every measure other than their number. Here, the IPO count is down, but (i) the IPO market capitalization is not down, and (ii) accounting for public firms’ direct acquisitions of private firms, has many private firms moving from into the public firm sector.

<sup>105</sup> Cf. Partnoy, *supra* note 85 (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”).

<sup>106</sup> 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.

<sup>107</sup> 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’); LUDOVIC PHALIPPOU, PRIVATE EQUITY LAID BARE \_\_ (3d ed. 2021).



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 should not be 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.”<sup>108</sup> 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 Dharmapal found little bunching below the level at which Sarbanes-Oxley’s thresholds kicked in.<sup>109</sup> 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 study and more than that in the Dharmapal study, but still small for the median firm.<sup>110</sup> 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 shown in Part II of this paper.

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 some small public firms to merge and stop some small private firms from going public. But too few dollars are involved to explain why bigger firms would merge with other big firms unless there were major I.O. benefits. Recall that more than 2,500 of the 4,300 public firm mergers since 1996

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<sup>108</sup> 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](http://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>.

<sup>109</sup> Dhammika Dharmapal, *Estimating Firms’ Responses to Securities Regulation Using a Bunching Approach* (ECGI Fin. Series 867, 2023), [www.ssm.com/abstract=2817151](http://www.ssm.com/abstract=2817151).

<sup>110</sup> 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.

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 21<sup>st</sup> Century Fox.<sup>111</sup>

Yes, there are other costs of being public, like the risk of being sued, that are not fixed costs. Some risks of suit rise with bigger size. 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 but sharply 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 no such spike occurred.<sup>112</sup>

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 or so, this is a noticeable expense.<sup>113</sup> 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.<sup>114</sup> 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.

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<sup>111</sup> 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/](http://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.

<sup>112</sup> 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 49, 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.

<sup>113</sup> US Treasury IPO Task Force, *supra* note 108; 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).

<sup>114</sup> Larger firms presumably bear higher costs than that \$1.8 million annually. But these 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 108. 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 finds no bunching—Dharmapala, *supra* note 109. No bunching, no costs. Ewens, Xiao & Xu, *supra* note 110, 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.

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, basic public firm profits were \$2.1 trillion. Public firm profits just about doubled, increasing 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.<sup>115</sup>

#### IV. IMPLICATIONS FOR CORPORATE LAW POLICYMAKING

Our main purpose for this Article is to demonstrate that public firms 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 as worrisome as analysts and policymakers think. Policymaking consequences follow.

##### 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 distorts the public firm reality by overemphasizing one relevant number and ignoring the others. That distorted perspective erroneously fit with a negative overall view of corporate securities regulation.<sup>116</sup>

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<sup>115</sup> 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, the 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 900 of the acquisitions of small firms in the past quarter-century, it is implausible that this disclosure aspect accounts for \$1.4 trillion in increased profit.

<sup>116</sup> Perhaps obvious but it bears mentioning in a footnote 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.<sup>117</sup> 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.<sup>118</sup> Proposals are on the table to count groups by their individual members, 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, we should make larger private firms become public firms.<sup>119</sup>

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.

True, corporate law policymakers could still think that a bigger public disclosure regime is overall better than a smaller one. But the belief that the public firm sector is shrinking should not be a consideration, because it is not shrinking.<sup>120</sup>

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<sup>117</sup> 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").

<sup>118</sup> 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. 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).

<sup>119</sup> Cf. Lee, *supra* note 117 (text accompanying Commissioner Lee's note 30). Some may desire this result because public firms are more readily regulated for social impact.

<sup>120</sup> Officials who fear over-regulation would presumably not recalibrate their bottom line on this alone.

Nuances are relevant. The data in this paper shows public firms' capitalization, profits, and revenue not to be shrinking as a fraction of the economy. It's possible that these measures are also increasing for private firms, particularly the larger private firms.

### C. Corporate and Securities Law to Facilitate Competition

The Securities and Exchange Commission primary mission has long been to protect the stock-owning public.<sup>121</sup> From that protection, capital markets could develop well, strengthening the American economy and American well-being.

The SEC's core mission is not to protect and foster product market competition;<sup>122</sup> 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.<sup>123</sup> Antitrust, industrial organization, and competitive product markets are not. Yet, the analysis here tells us that industrial organization ties up 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.<sup>124</sup>

There are good reasons for them not being part of that mission. First, it's inherently uncertain how to implement such a general goal—e.g., should it be more public firms to compete with the bigger, already concentrated public firms? Or better-financed private firms to compete with all public firms? 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

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<sup>121</sup> 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).

<sup>122</sup> 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 121.

<sup>123</sup> 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.

<sup>124</sup> *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](https://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 Gellasch, 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.

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 regulation of some sort was determining the number of public firms; we show why industrial organization is more likely to be responsible for the public firm sector's reconfiguration.<sup>125</sup>

On this issue—how to deal with the diminishing number of public firms—we can firmly advise the SEC to *stop* inferring from their declining *number* that there's a corporate securities regulatory problem. We cannot advise the SEC 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. Profits, for example, roughly doubled, even as the number of firms nearly halved. Public firms are as economically important as they were when the number of public firms peaked; they are fewer in number but bigger and more profitable. 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. But reduced investment choice is 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, and we bring forward the Industrial Organization Explanations. SEC commissioners from one political party see the impetus as coming from overregulation of public stock markets; commissioners from the other party see the impetus as largely coming from the rollback of private firm regulation. The two sides have more in common than they think. Neither side considers the changing industrial organization terrain. 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'

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<sup>125</sup> Cf. Aneil Kovvali, *Stakeholderism Silo Busting*, \_\_ U. CHI. L. REV. \_\_ (forthcoming, 2023) (stakeholderism is breaking down separate regulatory siloes of for antitrust, bankruptcy, corporate, and environmental law).

larger size as arising largely from efficiency, economic reconfigurations, or possibly from weakened antitrust.

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. 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 the full, actual reconfiguration and the public firms' profitability, value, revenues, and investment; the Legal Explanations cannot. 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. 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 public firm sector's real economic activity—the public firm sector is not contracting. To understand the public firm sector's full role today, policymakers should look not just at the number of public firms but at basic measures of business prowess, like profit, total capitalization, revenues, and investment. When they do, they will conclude that overall, the public firm sector is not shrinking.