UNICORNIPHOBIA

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The largest companies in the United States are now subject to two alternative sets of rules. One set of companies makes extensive periodic disclosures about their business, finances, and corporate governance arrangements; faces market discipline from short-sellers, financial analysts, and hedge fund activists; and faces a realistic threat of Securities and Exchange Commission (SEC) investigation and private securities litigation. The others don't.

Securities regulators are getting worried. The proliferation of "Unicorns"—startup companies that reach a valuation of $1 billion or more without going public—spawned a flood of academic articles asserting that these companies pose a distinct danger to society and that new securities regulations are needed to rein them in. These calls are now resonating at the SEC, which is on the verge of a significant crackdown on private markets as of this writing.

This paper aims to open a debate in a conversation that so far has been one-sided. I present three main objections to the suddenly dominant view that Unicorns are especially dangerous and need to be reined in by new securities regulations. First, I show that pushing Unicorns towards public company status may not improve their proclivity to risky and harmful conduct and may actually make things worse. Second, while these articles rely most heavily on Uber and Theranos to demonstrate the dangers posed by Unicorns, there is little or no attempt to show how their proposed reforms would have mitigated any significant harm caused by either company—and, in fact, it is highly questionable that they would have done so. Third, I show that important social benefits provided by Unicorns are contingent on the current securities regulation regime, such that altering the regime would jeopardize these benefits.

To fight fire with fire, I back up this last point with a detailed case study of the "corporate adolescence" of a company that all will agree has recently generated an enormous social benefit: Moderna, Inc. Had the proposed new securities regulations been in place during Moderna's "corporate adolescence," it's quite plausible that they would have significantly disrupted the company's development and that Moderna might not have been in a position to develop the highly effective COVID-19 vaccine as quickly as it did. Our survival and recovery from the global coronavirus pandemic hinged, in part, on our current approach to securities regulation of Unicorns.

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Table of Contents

I. Unicorniphobia 120
 A. *Unicorniphobia in the Legal Academy* 122
 B. *Unicorniphobia at the SEC* 125
II. Maybe It's All Bad? 128
 A. *Public Companies' Dangerous Characteristics and Harmful Impacts* 128
 B. *Out of the Frying Pan* 132
III. Would the Proposed Reforms Have Made a Difference? 134
 A. *Uber: The "Poster Child" of Unicorn Misconduct* 135
  1. Harmed Investors 136
  2. Harmed Employees 137
  3. Harmed Legal Systems 142
 B. *Theranos: "Ringing the Alarm Bell on Fraud in the Private Market"* 144
  1. More Disclosure 145
  2. More Tradability 147
  3. More Whistleblowers 151
  4. More SEC Enforcement 152
IV. Unicorniphilia 153
 A. *The Benefits of Current Unicorn Regulation* 154
  1. Secrecy 155
  2. Investor Lock-In 156
  3. Limited Whistleblower Protections 160
  4. Being off the SEC's Radar 160
 B. *Moderna: A Good "Bad" Unicorn* 162
  1. Moderna's Story 162
  2. How Would Proposed Securities Regulation Reforms Have Impacted Moderna's Corporate Development? 175
V. Unicorn Regulation for the Next Crisis 179
VI. Towards a Real Evaluation of Unicorn Costs and Benefits 183
 A. *"Make Securities Regulation Great Again"?* 183
 B. *De-de-regulation?* 184
 C. *Are Unicorns Permanently Avoiding Public Company Status?* 185
 D. *Regulatory Incoherence?* 186
Conclusion 187

"You don't want to go through your adolescence publicly."
-Stephen Hoge, President, Moderna Inc. (2016)[1]

Once upon a time, a successful startup would reach a certain stage and then "go public"—selling securities to ordinary investors, perhaps listing on a national stock exchange, and taking on the privileges and obligations of a "public company" under the federal securities regulations.[2]

Things have changed. Successful startups are now able to grow quite large without public capital markets. Not long ago, a private company valued at more than $1 billion was rare enough to warrant the nickname "Unicorn."[3] Today, over 1,000 companies qualify.[4]

"Unicorns" are now practically unavoidable. You probably directly interacted with a current or recent Unicorn in the last few days—or hours. You may have communicated using Zoom, Snap, Slack, or Skype; shared files with Dropbox; listened to an album on Spotify; watched a movie on Roku; invested using Robinhood or Stash; connected on Facebook, LinkedIn, Pinterest, Twitter, Nextdoor, or TikTok; sipped Oatly milk in your coffee; eaten a Beyond Burger, Impossible Burger, a salad from Sweetgreen, or a meal from BlueApron; read something on Vox, Reddit, or Buzzfeed; ordered food from Instacart, Postmates, UberEats, or DoorDash; booked a vacation on Airbnb; napped on a couch from Wayfair; laced up Allbirds shoes or sported Warby Parker glasses; shaved with razors-to-order from Harry's or Dollar Shave Club; used a Pax vaporizer or a Juul e-cigarette; or worked out on a Peloton.

Even if you do not consume any of these products or services, Unicorns very likely have been significantly impacting your life. Current and recent Unicorns provide a huge array of goods and services to many of the organizations that you may depend on—from "back-office" operations,[5] to customer-facing services,[6] to providing raw materials used in industrial production.[7]

Unicorns have recently made an even more significant positive social impact. Two of the first FDA-approved COVID-19 vaccines were developed

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[1] Damian Garde, *Ego, Ambition, and Turmoil: Inside One of Biotech's Most Secretive Startups,* STAT (Sept. 13, 2016), https://www.statnews.com/2016/09/13/moderna-therapeutics-biotech-mrna/.

[2] *See infra* Part I (defining the term and outlining obligations).

[3] Aileen Lee, *Welcome to the Unicorn Club: Learning from Billion-Dollar Startups,* TECHCRUNCH (Nov. 2, 2013, 2:00 PM), https://techcrunch.com/2013/11/02/welcome-to-the-unicorn-club/.

[4] CB INSIGHTS, *The Complete List of Unicorn Companies*, https://www.cbinsights.com/research-unicorn-companies (last visited July 2022).

[5] *E.g.*, Palantir (data analytics); ThoughtSpot (data analytics); Carta (capitalization and equity management software); Zenefits (human resources); Symphony (intra-corporate communications); TripActions (corporate travel); ezCater (corporate catering); Good (network security); Duo (network security); Convoy (logistics).

[6] *E.g.*, Sprinklr (marketing); Podium (marketing); ZocDoc (scheduling); Toast (payments); Square (payments); Stripe (payments).

[7] *E.g.*, Ginkgo Bioworks; Zymergen.

by companies that were, until recently, Unicorns. One, Moderna Inc., was founded in 2010 and achieved multi-billion dollar valuation soon thereafter but remained private until a December 2018 IPO.[8] Similarly, the so-called "Pfizer" vaccine was actually developed by that company in coordination with BioNTech, a German company founded in 2008 that had an IPO in 2019 with a $3.4 billion valuation.[9]

Yet, for many securities regulation scholars and regulators, the growth of private markets represents a great threat. A wave of recent articles[10] argue that Unicorns pose a distinct danger to society and need to be "tamed."[11] According to these articles, these large and powerful companies are especially prone to risky, socially harmful, and often illegal activities that injure not only investors but also employees, consumers, and society at large. And, these authors say, a key reason these companies are so dangerous is that they are unconstrained by the institutional and regulatory forces that keep public companies in line. The proposed solution, naturally, is to bring these forces to bear on private companies through expanded disclosure obligations, secondary-market trading, whistleblower protections, and SEC enforcement.[12]

This school of thought has found purchase inside the SEC. Following the appointment of a leading academic unicorn critic to a senior regulatory position and a pair of speeches by Commissioners embracing and citing many of these papers, the agency has signaled (formally and otherwise) that it is preparing to launch a historic regulatory effort to reassert its jurisdiction over these companies.[13]

Before the SEC moves forward with this unicorn crackdown, this paper aims to open a debate in a conversation that so far has been one-sided. I present three main objections to the suddenly dominant view that Unicorns

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[8] *See infra* Section IV.B.1 (discussing Moderna's corporate history).

[9] Jared Hopkins, *How Pfizer Delivered a Covid Vaccine in Record Time: Crazy Deadlines, a Pushy CEO,* Wall St. J. (Dec. 11, 2020, 9:34 PM) https://www.wsj.com/articles/how-pfizer-delivered-a-covid-vaccine-in-record-time-crazy-deadlines-a-pushy-ceo-11607740483; BioNTech SE, Registration Statement (Form F-1) (Sept. 9, 2019); Rebecca Spalding & Joshua Franklin, *Germany's BioNTech Raises $150 Million in Smaller-Than-Planned U.S. IPO amid Market Volatility*, Reuters (Oct. 9, 2019, 1:13 PM) https://www.reuters.com/article/us-biontech-ipo-idUKKBN1WO29B.

[10] For clarity, I will refer to the paper you are reading as a "paper" and to the ones I am critically engaging with as "articles."

[11] Jennifer Fan, *Regulating Unicorns: Disclosure and the New Private Economy*, 57 B.C. L. Rev. 583 (2016); Renee Jones, *The Unicorn Governance Trap,* 166 U. Pa. L. Rev. Online 165 (2017); Ann Lipton, *Not Everything is About Investors: The Case for Mandatory Stakeholder Disclosure*, 37 Yale J. Reg. 499 (2020); Verity Winship, *Private Company Fraud*, 54 U.C. Davis L. Rev. 663 (2020); Elizabeth Pollman, *Private Company Lies,* 109 Geo. L. J. 353 (2020); Donald Langevoort & Hillary Sale, *Corporate Adolescence: Why Did "We" Not Work?*, 99 Tex. L. Rev. 1347 (2021); Amy D. Westbrook, *We('re) Working on Corporate Governance: Stakeholder Vulnerability in Unicorn Companies*, 23 U. Penn. J. Bus. L. 505 (2021); 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 (2021); Matthew Wansley, *Taming Unicorns*, 97 Ind. L.J. 1203 (2022).

[12] *See infra* Section I.A.

[13] *See infra* Section I.B.

are socially dangerous and need to be reined in by new securities regulations.

First, pushing Unicorns toward public company status may not improve their proclivity to risky and harmful conduct and may actually make things worse. Since Enron, scholars have identified various features of public companies that make *those* companies especially prone to high-risk, socially destructive, and illegal conduct. To the extent this literature is correct, the proposed reforms would amount to forcing companies to shed one set of dangerous incentives for another.[14]

Second, proponents engage in a sleight of hand. To show that Unicorns pose unique dangers, these articles rely heavily on anecdotes and case studies of well-known "bad" Unicorns, especially the cases of Uber and Theranos.[15] Yet there is little or no attempt to show how their proposed reforms would have mitigated any significant harm caused by either of these companies. As I show, it is highly questionable that they would have.[16] Thus, the proposed solutions do not actually seem to match the problem identified.

Third, successful Unicorns provide some important benefits, not only to their investors and managers, but also to employees, consumers, and society at large, precisely because of the current state of the governing securities regulation regime. Altering this regime as these articles propose would put these benefits in jeopardy and thus may do more harm than good.[17]

To fight fire with fire, I back up this last point with a detailed case study of the "corporate adolescence" of a company that has recently generated an enormous social benefit: Moderna, Inc. Before going public in December 2018, Moderna was a secretive, controversial, overhyped biotech Unicorn without a single product on the market (or even in Phase 3 clinical trials), barely any scientific peer-reviewed publications, a history of turnover among high-level scientific personnel, a CEO with a penchant for over-the-top claims about the company's potential, and a toxic work culture.[18] Had the proposed new securities regulations been in place during Moderna's "corporate adolescence," it is quite plausible that they would have significantly disrupted the company's development such that Moderna might not have been in a position to develop the highly effective COVID-19 vaccine as rapidly as it did. Our survival and recovery from the global coronavirus pandemic hinged, in part, on our current approach to securities regulation of Unicorns.[19]

This lesson bears directly on our efforts to deal with another major crisis we are facing: climate change. Most profoundly, even as governments fail to take meaningful action on climate, Unicorns have been stepping up to

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[14] *See infra* Part II.
[15] *See infra* Part III.
[16] *Id.*
[17] *See infra* Part IV.
[18] *See infra* Section IV.B.
[19] *See id.*

the plate. A recent report identified as many as 78 "climate tech" Unicorns explicitly focused on developing new technologies to reduce greenhouse gas emissions or otherwise address the impacts of global warming.[20] Investors poured $87.5 billion into private climate tech startups from July 2020 through June 2021—about 14 cents of every venture capital (VC) dollar invested during that 12-month period.[21] As policymakers and scholars try to figure out how securities regulation can be used to aid in the fight against climate change, we should not overlook the important role that Unicorn regulation can play in these efforts. A potentially powerful way securities regulation can help fight climate change is by preserving the status quo. That is, by letting Unicorns be Unicorns.[22]

There is no doubt that Unicorns are a startling new phenomenon or that the substantial attention they have been receiving from regulators and scholars is well justified. A careful weighing of the costs and benefits is undoubtedly called for and all regulatory options should be on the table. Unfortunately, the debate over Unicorn reform has been repeatedly sidetracked by some unfounded assumptions and overheated rhetoric. Before concluding the paper, I turn to critique some of these questionable ideas that seem to come up again and again in calls for Unicorn reform.[23]

This paper proceeds in six Parts. Part I summarizes recent articles arguing that Unicorns pose a special risk of socially harmful fraud and misconduct and that a new approach to securities regulation is needed to rein them in, and then shows how these articles have made their way to the SEC which is currently planning to launch a major effort (inspired by these articles) to crackdown on Unicorns. Part II shows that pushing Unicorns towards public company status might be counterproductive by highlighting ways in which *public* companies (allegedly) pose a special risk of fraud and misconduct. Part III shows that the proposed reforms would not likely have mitigated any significant harm caused by these articles' two leading examples of "bad" Unicorns: Uber and Theranos. Part IV highlights the potentially high social costs of the proposed reforms and explores the case of Moderna. Part V considers lessons regarding the role securities regulation can play in fighting climate change. Part VI identifies and critiques some misleading assumptions that appear in many calls for Unicorn reform.

I. Unicorniphobia

Since the Great Depression, the federal government has imposed a substantial, and growing, set of legal obligations on "public" companies. These firms must make extensive disclosures regarding their finances, capital

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[20] PwC, State of Climate Tech 2021: Scaling Breakthroughs for Net Zero (2021).
[21] *Id.* at 3.
[22] *See infra* Part V.
[23] *See infra* Part VI.

structure, executive compensation, material risks, and more—both initially when they take on "public" status and periodically thereafter.[24] They are also subject to detailed regulations regarding corporate voting,[25] tender offers,[26] internal controls,[27] stock ownership and trading by insiders,[28] board composition,[29] and accounting practices,[30] among other subjects. These "public" firms are also much more likely to face legal scrutiny for violating securities laws—both from SEC enforcement actions[31] and from private class actions under the federal securities laws.[32]

Traditionally, large and growing firms were happy to pay this price to gain access to the public capital markets.[33] That calculus has changed. Companies are now able to raise substantial capital *without* tapping the public markets, thanks to the proliferation of private equity and VC firms, and the growing interest of other institutional investors to this market.[34] Regulatory changes over the last few decades also encouraged this trend.[35] More companies are taking advantage; staying private longer and avoiding the obligations of "public" status while raising astronomical sums through the private capital markets.

Legal academics have expressed alarm about the proliferation of large companies outside the scope of traditional securities regulation and have proposed bold reforms to crackdown on these companies.[36] These arguments have now gained purchase in the SEC, which is on the verge of adopting some of the bold academic prescriptions. This Part reviews the academic arguments that these large private companies are especially dangerous and that new securities regulations are needed to rein them in, as well as the SEC's burgeoning efforts to put those ideas into effect.

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[24] Securities Act § 10, 15 U.S.C. § 77j; Exchange Act § 13, 15 U.S.C. § 78m.

[25] Exchange Act § 14(a), 15 U.S.C. § 78n.

[26] Exchange Act § 14(e), 15 U.S.C. § 78n.

[27] Exchange Act § 13(b), 15 U.S.C. § 78m.

[28] Exchange Act § 16, 15 U.S.C § 78p.

[29] Exchange Act § 10(c), 15 U.S.C § 78j-3.

[30] Exchange Act § 10(a), 15 U.S.C. § 78j-1.

[31] Pollman, *supra* note 11, at 393–94.

[32] *Id.* at 359; Winship, *supra* note 11, at 709–12.

[33] The "public" status that triggers the aforementioned obligations applies to any firm that lists on a national stock exchange, sells securities in a public offering, or exceeds a statutory threshold on firm size and number of shareholders. *See* Exchange Act §§ 15(d), 12(a), 12(g); 15 U.S.C. §§ 781, 780.

[34] The securities laws exempt these "private placement" investments from the registration and disclosure requirements imposed by the Securities Act for public securities offerings. *See* Securities Act § 4(a)(2), 15 U.S.C. § 77d; Regulation D, 17 C.F.R. 230.500-ff.

[35] Jones, *supra* note 11, at 170, 174–76; Fan, *supra* note 11, at 585; Wansley, *supra* note 11, at 1214–15; Georgiev, *supra* note 11, at 264–74.

[36] *Supra* note 11 (collecting Unicorniphobia articles).

A. Unicorniphobia in the Legal Academy

According to a wave of recent legal scholarship, Unicorns possess institutional and regulatory characteristics that make them especially dangerous. To begin, their sheer magnitude gives them the power to impose significant harms; they are, by definition, large and powerful companies, in some cases with operations spanning the globe.[37] They also operate in an institutional and regulatory environment that fosters misconduct. They are free from the extensive regulatory and compliance burdens that apply to public companies, discussed above.[38] Because their shares do not trade freely, there are no market players like short-sellers and financial analysts with incentives to gather and publicize negative information about these companies.[39]

The individuals who serve as Unicorn managers also possess dangerous personal characteristics. They are vested with especially broad discretion,[40] are under pressure to achieve astronomical results,[41] and have a messianic zeal for the company's mission,[42] but are often inexperienced[43] and have personality traits associated with a higher risk of "ethical risk-taking,"[44] and are overwhelmingly male.[45] Unicorn board members are also likely to be "friendly" with the CEO or founder, and thus will not serve as a meaningful constraint.[46]

Unicorns' workplace culture is often "toxic,"[47] "systematically unstable,"[48] "dysfunctional,"[49] and/or "adolescent"[50] giving rise to harmful behavior. On-the-job drug and alcohol use is common,[51] as is rapid turnover.[52]

And Unicorn investors may exacerbate the problem. These companies limit disclosures to investors who must compete for the opportunity to invest.[53] Venture capital firms desire a "founder-friendly" reputation, so they do not ask questions or report bad things they see at companies.[54] They put

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[37] Fan, *supra* note 11, at 585; Pollman, *supra* note 11, at 358, 394.

[38] Lipton, *supra* note 11, at 520; Pollman, *supra* note 11, at 359, 377, 380, 382, 386; Winship, *supra* note 11, at 681, 706–07, 709–12; Jones, *supra* note 11, at 179, 186; Fan, *supra* note 11, at 608; Georgiev, *supra* note 11, at 283–85.

[39] Winship, *supra* note 11, at 708–09; Wansley, supra note 11, at 1205–06.

[40] Jones, *supra* note 11, at 169, 174; Westbrook, *supra* note 11, at 519; Pollman, *supra* note 11, at 383.

[41] Pollman, *supra* note 11, at 380.

[42] Westbrook, *supra* note 11, at 520.

[43] Jones, *supra* note 11, at 168; Langevoort & Sale, *supra* note 11, at 1361–62.

[44] Langevoort & Sale, *supra* note 11, at 1360.

[45] Westbrook, *supra* note 11, at 519; Langevoort & Sale, *supra* note 11, at 1362–63.

[46] Westbrook, *supra* note 11 at 528.

[47] Jones, *supra* note 11, at 179; Lipton, *supra* note 11, at 521; Westbrook, *supra* note 11, at 556.

[48] Lipton, *supra* note 11, at 522.

[49] *Id.* at 524.

[50] Langevoort & Sale, *supra* note 11, at 1353.

[51] *Id.*; Lipton, *supra* note 11, at 521.

[52] Jones, *supra* note 11, at 180.

[53] Pollman, *supra* note 11, at 373; Winship, *supra* note 11, at 707.

[54] Langevoort & Sale, *supra* note 11, at 1363; Wansley, *supra* note 11, at 1241.

pressure on Unicorns to take risks in pursuit of extremely ambitious goals because they are looking for *home runs*, not singles.[55] They may even be indifferent to fraud.[56] They are also overwhelmingly male, which exacerbates risk-seeking and groupthink.[57] And because their management fees are calculated based on the current valuation of the portfolio, VCs get "a tangible payoff from an inflated valuation even if, later on, the bubble deflates."[58]

As a result of all these regulatory, institutional, and personal characteristics, these articles argue that Unicorns tend to engage in risky, harmful, and illegal conduct. Unicorns may harm investors—including both the sophisticated investors (like VCs) who make direct investments[59] and the less sophisticated ones who are exposed to Unicorns through mutual and pension fund investments[60] or as employees as part of their compensation packages.[61] Unicorns may also harm other corporate stakeholders, including employees[62] and consumers.[63] And finally, Unicorns may harm broader interests including "local ecosystems,"[64] "communities,"[65] regulatory systems,[66] and "local economies."[67]

To mitigate these harms, the articles propose expanding securities regulation for Unicorns.

Mandatory IPOs. The most direct way of solving the Unicorn problem is to regulate them out of existence. Donald Langevoort and Hillary Sale endorse a policy of "nudg[ing] startups towards a quicker IPO"[68] which would "mov[e] public company status and the attendant governance obligations to a somewhat earlier phase in the successful start-up's adolescence, once the basic science or technology is in place and before its footprint on society grows deeper and deeper."[69] Similarly, Amy Deen Westbrook would force companies to go public either when they pass a $1 billion valuation, or when their "public float" crosses a certain threshold.[70] And George Georgiev conditionally embraces a proposal to use the SEC's existing authority

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[55] Pollman, *supra* note 11, at 379–80; Langevoort & Sale, *supra* note 11, at 1365.

[56] Wansley, *supra* note 11, at 1237; Pollman, *supra* note 11, at 392.

[57] Westbrook, *supra* note 11, at 533–34.

[58] Langevoort & Sale, *supra* note 11, at 1365.

[59] Jones, *supra* note 11, at 182–83.

[60] Pollman, *supra* note 11, at 356; Westbrook, *supra* note 11, at 543.

[61] Fan, *supra* note 11, at 603; Winship, *supra* note 11, at 707; Pollman, *supra* note 11, at 382–83; Georgiev, *supra* note 11, at 291–92.

[62] Jones, *supra* note 11, at 179; Lipton, *supra* note 11, at 521; Westbrook, *supra* note 11, at 522; Wansley, *supra* note 11, at 1215.

[63] Pollman, *supra* note 11, at 356; Wansley, *supra* note 11, at 1215, 1224, 1231.

[64] Fan, *supra* note 11, at 664.

[65] Wansley, *supra* note 11, at 1215.

[66] Jones, *supra* note 11, at 181.

[67] Westbrook, *supra* note 11, at 561–62.

[68] Langevoort & Sale, *supra* note 11, at 1382.

[69] *Id.* at 1382 n.219.

[70] Westbrook, *supra* note 11, at 571–72; *see also* Pollman, *supra* note 11, at 397 ("bolster[ing] the rising voices pushing for reexamination of the public-private divide"); Fan, *supra* note 11, at 609–10 (predicting her proposal will "result in companies going public earlier").

under section 12(g) of the Exchange Act to force larger private companies to go public.[71]

More disclosures. Jennifer Fan proposes a new "hybrid" disclosure regime for any private company within 90 days of closing a financing valued at $1 billion or more.[72] These companies would have to disclose periodically ("perhaps quarterly") key financial information, post their certificates of incorporation with the "key terms" highlighted in "layperson's language," and disclose "relevant information about the company (such as the number of employees)."[73]

Renee Jones also proposes new mandatory disclosures, but would exempt well-established private companies (like Koch Industries) that "do not appear to present [the] same governance problems as Unicorns."[74] To do this, Jones embraces a proposal from Michael Guttentag[75] that would apply the full arsenal of mandatory securities disclosures to any company with a market capitalization above $35 million *or* with more than 100 beneficial owners, unless the firm either maintained strict restrictions on the transfer of shares or committed to an alternative public disclosure regime.[76]

Ann Lipton proposes an entirely new set of mandatory disclosures for *all* firms, public and private.[77] Her proposed new disclosures would cover "both social *and* financial information"— including "issues pertaining to tax payments, anticorruption measures, and antitrust compliance . . . corporate governance, environmental impact, labor relationships (including diversity, working conditions, and pay practices), political activity, and customer protection (transparency, safety, privacy)."[78] Lipton acknowledges that this regime would impose special burdens on private companies who would be forced to disclose for the first time "basic organizational and financial data such as governance structure, income statements, balance sheets, business segments, and geographic areas of operation."[79]

More trading. Matt Wansley proposes a set of reforms designed to liberalize trading in Unicorn shares, which would create a market for short-sellers, analysts, and financial journalists to gather negative information about Unicorns and thereby deter and speed up disclosure of corporate mal-

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[71] Georgiev, *supra* note 11, at 295–96, 300–03 (calling the proposal a "bold step toward rebuilding the original public-private divide" that would "restore most of securities law's diminished regulatory capacity" and address "the fragmented nature of investor protection"); *see also infra* Section I.B (discussing this as one of the main proposals that the SEC is actively pursuing). *But see* Alexander I. Platt, *Legal Guardrails for a Unicorn Crackdown,* 120 MICH. L. REV. ONLINE 89 (2022) (showing that SEC lacks legal authority to pursue this reform).

[72] Fan, *supra* note 11, at 609.

[73] *Id.* at 608–09, 636, 640–42.

[74] Jones, *supra* note 11, at 184.

[75] *Id.* at 183–84.

[76] *Id.* at 184.

[77] Lipton, *supra* note 11, at 564.

[78] *Id.* at 564.

[79] *Id.* at 565–66.

feasance.[80] Wansley's proposal is designed to "lead most unicorns to make their shares tradable."[81]

More whistleblowers. Verity Winship proposes expanding whistleblower protections for Unicorn employees.[82] Specifically, she would add anti-retaliation protections for internally reporting whistleblowers who are Unicorn employees.[83] She also proposes broadening the list of agencies to which a whistleblower can report and still receive protection (and, perhaps, bounties).[84] And she proposes that the SEC send a strong signal to the whistleblower bar that it is interested in hearing tips from Unicorn employees by bringing more enforcement actions against Unicorns and issuing more bounties to Unicorn whistleblowers.[85]

More public enforcement. Elizabeth Pollman proposes more SEC enforcement against Unicorns.[86] She argues that this is necessary in order for the SEC to maintain its "long-standing" proportional coverage of private markets as it had done "in times past."[87] Pollman suggests the SEC focus on cases where "there is a vulnerable or harmed class of employees."[88] She acknowledges that the "SEC's resources are limited," meaning that the agency would either have to get more money from Congress or de-emphasize some other regulatory or enforcement priority.[89]

B. Unicorniphobia at the SEC

After Joe Biden's election and his appointment of Gary Gensler as SEC chair, the SEC began sending clear signals that it was sympathetic with the academic criticisms surveyed above and planned to take bold action to reassert its jurisdiction over private markets.

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[80] Wansley would abolish the limits on the number of accredited investors a company may have without going public; eliminate the regulatory "holding period" that restricts resales of Unicorn securities to accredited investors; mandate a "Most Favored Nations" clause for all Unicorn securities which would force Unicorns to pick an all or nothing policy on secondary market tradability; and then require that all Unicorns who allow tradability to make "limited public disclosures," which would include "the issuer's most recent balance sheet and profit and loss and retained earnings statements," and "[s]imilar financial information for such part of the [two] preceding fiscal years as the issuer or its predecessor has been in existence." Wansley, *supra* note 11, at 1250–58.

[81] *Id.* at 1256.

[82] Unicorn employees who report externally to the SEC already have the same anti-retaliation protections as public company employees and already are eligible to receive a "bounty" payment. Winship, *supra* note 11, at 719–20.

[83] *Id.*

[84] *Id.* at 720.

[85] *Id.* at 722; *see also* Pollman, *supra* note 11, at 400 (proposing "new mechanisms to provide employees with greater incentives to serve as early whistleblowers or increase their voice in governance, such as through board access or work councils").

[86] Pollman, *supra* note 11, at 393–96.

[87] *Id.* at 394.

[88] *Id.* at 396.

[89] *Id.* at 391.

The first signal was the appointment of one of the leading academic Unicorn critics to lead the agency's Division of Corporation Finance. Back in 2017, Renee Jones had published a scathing critique entitled *The Unicorn Governance Trap*, calling for the imposition of mandatory disclosure on any company with a market capitalization above $35 million and more than 100 beneficial owners, unless they maintained strict restrictions on the transfer of their shares.[90] In 2019, she had raised these concerns in testimony before the House Financial Services Committee and called on Congress to repeal the part of the JOBS Act that had facilitated the growth of Unicorns.[91] When she was appointed in June 2021 to lead the SEC's Division of Corporation Finance, the *Wall Street Journal's* headline read: "SEC Picks Professor Who Criticized Startup 'Unicorns' as Top Corporate Regulator."[92]

The next big signal came in October 2021, when Democratic Commissioner Allison Herren Lee delivered public remarks embracing the academic criticisms that private markets had grown too large and calling for the reassertion of the SEC's role in this domain and directly citing many of the academic articles discussed above.[93] Lee explained that the "explosive growth of private markets" was "[p]erhaps the single most significant development in securities markets in the new millennium."[94] She focused particular skepticism on Unicorns, who are large enough to "have a dramatic and lasting impact on our economy" all the while leaving "investors, policymakers, *and the public* know[ing] relatively little about them compared to their public counterparts."[95] Lee emphasized the high stakes, analogizing to two of the most significant episodes in securities regulation history. First, she compared the present moment to the early 1930s, when Congress responded to the crash of 1929 and the Great Depression by enacting the first securities regulation statutes creating the SEC and the mandatory disclosure regime. She also analogized to the early 1960s, when Congress had acted to bring larger OTC-traded companies under the public disclosure regime.[96]

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[90] Jones, *supra* note 11, at 184.

[91] *Examining Private Market Exemptions as a Barrier to IPOs and Retail Investment: Hearing Before the Subcomm. on Inv. Prot., Entrepreneurship and Cap. Mkts. of the H. Comm. of Fin. Servs.,* 116th Cong. 13 (2019) (statement of Renee M. Jones, Professor of Law, Boston College Law School).

[92] Dave Michaels, *SEC Picks Professor Who Criticized Startup 'Unicorns' as Top Corporate Regulator*, WALL ST. J. (June 14, 2021, 4:51 PM), https://www.wsj.com/articles/sec-hires-boston-college-professor-as-top-corporate-regulator-11623686494.

[93] Allison H. Lee, *Going Dark: The Growth of Private Markets and the Impact on Investors and the Economy* (Oct. 12, 2021), *in* HARVARD LAW SCHOOL FORUM ON CORPORATE GOVERNANCE at nn.11, 12, 21, 22, 30 & 77 (citing papers by Renee Jones, Elisabeth de Fontenay, Jennifer Fan, Ann Lipton, Verity Winship, and Elizabeth Pollman, among others). Lee also included a citation to an earlier draft of the paper you are reading. *Id.* at n.77.

[94] *Id.*

[95] *Id.* (emphasis added).

[96] *Id.* Commissioner Lee stepped down from the Commission in 2022. Ephrat Livni, *Allison Herren Lee Will Step Down as S.E.C. Commissioner, Opening Another Vacancy at the Agency,* N.Y. TIMES (Mar. 15, 2022).

In April 2022, Democratic Commissioner Caroline A. Crenshaw delivered remarks that embraced some of the academic criticisms, called for consideration of bold reforms, and cited with approval one of the academic articles discussed above by George Georgiev.[97] Crenshaw warned that "because of the less stringent disclosure requirements," the shift towards private markets has come "at the expense of actual, substantive, meaningful disclosure to investors, *stakeholders* and regulators."[98]

The SEC is gearing up to crack down on Unicorns. By far the boldest proposal under consideration would leverage the agency's authority under § 12(g) of the Exchange Act to force private companies to "go public" when they reach a certain size. The provision requires any company whose shares are "held of record" by more than 2,000 persons to take on the full set of obligations imposed by federal securities regulations on public companies, including extensive disclosure.[99] But, today, this 2,000 shareholder trigger has no real constraining effect; because a single holder "of record" can easily (and often does) stand in for tens, hundreds, or even thousands of real beneficial owners, private companies can easily raise endless amounts of capital without tripping the 2,000 shareholder threshold.[100] The SEC is actively preparing a regulatory proposal that would close this loophole by mandating a "look through" to the beneficial owners of the securities for purposes of the shareholder count.[101] The details remain to be seen, but the agency is apparently eager to leverage this power to significantly curtail private companies' ability to grow outside of the regulatory scrutiny that accompanies public company status.[102]

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[97] Caroline A. Crenshaw, Comm'r, SEC, Grading the Regulators and Homework for the Teachers: Remarks at Symposium on Private Firms: Reporting Financing, and the Aggregate Economy at the University of Chicago Booth School of Business (Apr. 14, 2022) (citing article by Georgiev).

[98] *Id.* (emphasis added).

[99] *See* Exchange Act § 12(g)(1), 15 U.S.C. § 78l(g)(1). More precisely, the requirement kicks in for companies with "total assets exceeding $10,000,000 and a class of equity security (other than an exempted security) held of record by either – (i) 2,000 persons, or (ii) 500 persons who are not accredited investors . . . ."

[100] *See* Lee, *supra* note 93, at 4 ("[T]he decision to file periodic reports has increasingly become optional.").

[101] *See* SEC Reg-Flex Agenda, *Revisions to the Definition of Securities Held of Record* (Fall 2022) (including this proposal on the SEC's regulatory agenda, with a notice of proposed rulemaking expected in April 2023); *see also* Lee, *supra* note 93 ("[I]t's time for us to reassess what it means to be a holder of record under Section 12(g)" and "it is clear the Commission has the authority" to "require issuers to look through to beneficial owners[.]"); Paul Kiernan, *SEC Pushes for More Transparency From Private Companies,* Wall St. J. (Jan. 10, 2022, 6:00 PM), https://www.wsj.com/articles/sec-pushes-for-more-transparency-from-private-companies-11641752489 ("[T]he agency is working on a proposal that would enable regulators to look under the hood of such entities for a more complete shareholder tally.").

[102] Kiernan, *supra* note 101, at 3–4 ("[The SEC's] goal is to push large, private companies into the same disclosure regime that their publicly traded counterparts face."); Lee, *supra* note 93 (introducing the § 12(g) reform as a way to "encourage companies to go public" and "ensure that the boundaries between public and private markets are sensibly drawn and maintained, and that the incentives for going public remain balanced"). For an argument that the SEC lacks legal authority to pursue this reform, see Platt, *supra* note 71.

Other contemplated regulatory actions relevant to the public-private divide include raising the accredited investor threshold,[103] tightening regulations on private funds,[104] and imposing new restrictions on private placements.[105]

II. Maybe It's All Bad?

Pushing companies towards public company status will help only to the extent public companies are less likely to engage in socially harmful activities than are Unicorns. As this Part shows, there are good reasons to doubt this is the case.

A. *Public Companies' Dangerous Characteristics and Harmful Impacts*

Since Enron, a substantial portion of corporate governance scholarship has been devoted to identifying ways in which *public* companies are especially dangerous. According to this literature, managers of public companies are subject to "market myopia" or "stock-market short-termism." This perverse over-accountability to their shareholders leads public companies to: take on excessive leverage and risk,[106] including by engaging in excessive

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[103] SEC Reg-Flex Agenda, *Regulation D and Form D Improvements* (Fall 2022) (listing this proposal on the SEC's regulatory agenda, with a notice of proposed rulemaking expected in April 2023). *See* Lydia Beyoud, *SEC 'Accredited Investor' Definition Tweak Faces Equity Concerns,* Bloomberg Law (Feb. 23, 2022, 6:00 AM), https://news.bloomberglaw.com/securities-law/sec-accredited-investor-definition-tweak-faces-equity-concerns. *Compare* SEC Reg-Flex Agenda, *Exempt Offerings* (Fall 2021) (considering seeking public comment on "updating the financial thresholds in the accredited investor definition" to "more effectively promote investor protection"), *with* SEC Reg-Flex Agenda, *Revisions to the Definition*, *supra* note 101 (no such proposal).

[104] SEC, Private Fund Advisers, 87 Fed. Reg. 16–886 (proposed Mar. 24, 2022). For a sample of the debate over this proposal, compare, for example, William W. Clayton, *High-End Bargaining Problems,* 75 Vand. L. Rev. 703 (2022); with Joseph Grundfest, *The Most Curious Rule Proposal in Securities and Exchange Commission History,* Rock Ctr. for Corporate Governance, Working Paper No. 248 (2022).

[105] SEC Reg-Flex Agenda, *Regulation D and Form D Improvements* (Fall 2022); Crenshaw, *supra* note 103 (asking whether Regulation D "could be improved or better calibrated" in light of the rise of unicorns); *see also* Letter from Leo E. Strine Jr. et al., Working Group on Securities Disclosure Authority, to Vanessa Countryman, Sec'y, SEC, *re: File No. S7-10-22* (June 16, 2022) at 24–25 n.40 (proposing that the SEC impose a dollar limit on Rule 506 private placements for private companies and/or a limit on the market capitalization of private companies eligible to raise funds under Rule 506). Most recently, SEC Commissioner Caroline Crenshaw has proposed amending Regulation D to impose mandatory periodic disclosure obligations on Unicorns. *See* Comm'r Caroline A. Crenshaw, *Big "Issues" in the Small Business Safe Harbor: Remarks at the 50th Annual Securities Regulation Institute* (Jan. 30, 2023). *But see* Alexander I. Platt, *(More) Legal Guardrails for a Unicorn Crackdown*, 98 N.Y.U. L. Rev. Online (forthcoming 2023) https://ssrn.com/abstract=4378770 (showing that SEC lacks legal authority to pursue this reform).

[106] Leo Strine, *One Fundamental Corporate Governance Question We Face: Can Corporations Be Managed for the Long Term Unless Their Powerful Electorates Also Act and Think Long Term?*, 66 Bus. Law. 1, 15–16 (2010).

stock buybacks[107]; underinvest in legal and regulatory compliance[108]; sacrifice product quality and safety[109]; slash R&D and other forms of corporate investment[110]; degrade the environment[111]; lay off and/or exploit workers[112]; loot employee pensions[113]; adopt suboptimal corporate governance rules and practices[114]; avoid taxes[115]; engage in anticompetitive monopolistic behavior[116]; promote social inequality[117]; and engage in accounting fraud and other corporate misconduct.[118]

The dangerous incentives that produce this parade of horrible outcomes allegedly flow from a constellation of market, institutional, cultural, and regulatory features that operate distinctly on *public* companies, not on Unicorns.

Executive Compensation. It is argued that the compensation of public company managers incentivizes them to take socially harmful actions. Numerous scholars have argued that managers compensated with stock options have a dangerous upside bias that leads them to pursue excessively risky and potentially harmful activities.[119] Similar incentives arguably also flow from other commonly used executive compensation practices tied to short-term stock price.[120]

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[107] Nitzan Shilon, *Pay for Destruction: The Executive Compensation Arrangements That Incentivize Value-Decreasing Stock Buybacks,* 51 (working paper Apr. 2021); Cynthia Williams, *Corporate Social Responsibility and Corporate Governance*, in OXFORD HANDBOOK OF CORPORATE GOVERNANCE at 675–76; Lynn Stout, *The Toxic Effects of Shareholder Primacy,* 161 U. PA. L. REV. 2003, 2017 (2013).

[108] John Armour et al., *Taking Compliance Seriously*, 37 YALE J. ON REG. 1, 20–31 (2020).

[109] LYNN STOUT, THE SHAREHOLDER VALUE MYTH 2 (2012).

[110] Leo Strine, *Who Bleeds When the Wolves Bite? A Flesh-and-Blood Perspective on Hedge Fund Activism and Our Strange Corporate Governance System,* 126 YALE L.J. 1870, 1939, 1942–43 (2017); Strine, *supra* note 106, at 16; John Coffee & Darius Palia, *The Wolf at the Door: The Impact of Hedge Fund Activism on Corporate Governance,* 41 J. CORP. L. 545, 574–77 (2016).

[111] STOUT, *supra* note 109, at 88.

[112] Strine, *Who Bleeds, supra* note 110, at 1941–42, 1946; Strine, *One Fundamental Question, supra* note 106, at 19; STOUT, *supra* note 109, at 88–89; Stout, *supra* note 107, at 2017.

[113] John Coffee, *The Underside of Hedge Fund Activism: Looting the Pension Fund*, CLS BLUE SKY BLOG (Apr. 14, 2021).

[114] STEPHEN BAINBRIDGE, CORPORATE GOVERNANCE AFTER THE FINANCIAL CRISIS 103–04 (2012).

[115] Strine, *supra* note 110, at 1947; STOUT, *supra* note 109, at 88.

[116] STOUT, *supra* note 109, at 88.

[117] Strine, *supra* note 110, at 1950–51.

[118] BAINBRIDGE, *supra* note 114, at 6, 118–20; Armour et al., *supra* note 108, at 21.

[119] A stock option gives the holder the right to buy the named stock at specified times at a specified price ("strike" price). The value of options is equal to the extent to which the market price on the specified date exceeds the strike price. The manager will benefit from all increases above the strike price, but is indifferent to how far below the strike price the stock drops—a drop of 1% or 90% will render her options equally worthless. Armour et al., *supra* note 108, at 25–26; Richard Posner, *Are American CEOs Overpaid, and, if so, What if Anything Should Be Done About It?,* 58 DUKE L.J. 1013, 1026–27 (2009).

[120] Guido Ferrarini & Maria C. Ungureanu, *Executive Remuneration, in* THE OXFORD HANDBOOK OF CORPORATE GOVERNANCE, 335–36 (Jeffrey N. Gordon & Wolf-Georg Ringe eds., 2015); Nitzan Shilon, *Stock Buyback Ability to Enhance CEO Compensation: Theory, Evidence, and Policy Implications,* 25 LEWIS & CLARK L. REV. 303 (2021); STOUT, *supra* note

The equity compensation of Unicorn managers does not include anything tied to the short-term market price of the company's stock—because there is no such thing. Accordingly, Unicorn executive compensation does not generate the same problems as public company executive compensation allegedly does.[121]

Quarterly Capitalism. It is argued that public company managers face pressure to engage in risky and harmful activities ahead of periodic disclosures required under the securities laws in order to enable the company to meet or beat various financial projections.[122] Some empirical evidence supports the link between increased frequency of financial reporting and managerial myopia.[123] Public figures regularly make this critique. Elon Musk complained that the "quarterly earnings cycle . . . puts enormous pressure on Tesla to make decisions that may be right for a given quarter, but not necessarily right for the long term."[124] Hillary Clinton called for an end to "quarterly capitalism" during her run for the White House in 2015–2016,[125] and in 2018, President Donald Trump asked the SEC to consider eliminating quarterly disclosures.[126] (The SEC sought comments on the proposal and ultimately elected not to proceed with the change.[127])

Unicorns are not required to make quarterly disclosures, and so are not subject to the same allegedly harmful pressure to meet or beat short-term performance projections.

Hedge Fund Activism. It is argued that public company managers face pressure to take socially harmful actions described above in order to ward off the threat of an intervention by an activist hedge fund or to appease one who has already launched an attack.[128] Because hedge funds' investment ho-

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109, at 71–73; Bainbridge, *supra* note 114, at 6, 118–20; David Millon, *Why Is Corporate Management Obsessed with Quarterly Earnings and What Should Be Done About It?,* 70 Geo. Wash. L. Rev. 890, 907–08 (2002).

[121] This is not to suggest that Unicorn managers' compensation is free of dangerous biases. For instance, these managers' substantial equity stakes arguably give them an upside bias because the value of a "home run" is so large.

[122] *See* James Park, *Do the Securities Laws Promote Short-Termism,* 10 U.C. Irvine L. Rev. 991, 1010–11, 1017 (2020); Stout, *supra* note 109, at 71–72; Millon, *supra* note 120, at 893–97.

[123] Arthur Kraft et al., *Frequent Financial Reporting and Managerial Myopia,* 93 Account. Rev. 249 (2018) (studying transition from semi-annual to quarterly reporting of U.S. firms between 1950 and 1970 and finding the change is associated with a substantial decline in corporate investments).

[124] Elon Musk, *Taking Tesla Private,* Tesla Blog (Aug. 7, 2018), https://www.tesla.com/pt_PT/Blog/taking-Tesla-private.

[125] Hillary Clinton, *Moving Beyond Quarterly Capitalism,* Medium (Jul. 24, 2015).

[126] Michael J. de la Merced & Matt Phillips, *Trump Asks SEC to Study Quarterly Earnings Requirements for Public Firms,* N.Y. Times (Aug. 17, 2018), https://www.nytimes.com/2018/08/17/business/dealbook/trump-quarterly-earnings.html.

[127] Request for Comments on Earnings Releases and Quarterly Reports, 83 Fed. Reg. 65601 (Dec. 21, 2018).

[128] Coffee, *supra* note 113; Strine, *supra* note 110, at 1895; Coffee & Palia, *supra* note 110, at 562; Stout, *supra* note 109, at 69–71. Hedge fund activists seek to make returns by buying up a substantial portion (usually 5-10%) of a public company's stock and then trying to get the company to change its business plan, leadership, governance system, or corporate

rizons are typically shorter than those of other investors, critics have long alleged (and pointed to some studies showing) that they push managers to make changes that harm long-term shareholders and other corporate stakeholders, including many of the harmful actions described above.[129]

Because Unicorns do not have shares that are freely traded in the same manner as a public company, they are insulated from the risk of hedge fund activist interventions. The investors in Unicorns are largely long-term allocators of capital, such as VC funds, who are mostly comfortable waiting five or more years for a portfolio company to exit via an IPO or sale.

Corporate Governance Practices. It is argued that public companies are pressured by a variety of forces to adopt various governance structures, rules, and practices that amplify the harmful effects of the aforementioned forces. For instance, in the last decade, shareholder activists have forced many public company boards to "declassify"—meaning that *all* members of the board are now subject to a shareholder vote *every* year, rather than serving on staggered terms. The S&P 500 experienced an 80% drop in the companies with staggered boards.[130] This change makes directors more accountable and responsive to shareholders. However, critics claim (and point to studies showing) that this change leads firms to reduce investment in R&D, perform worse over the long term, and harm various corporate stakeholders.[131]

Unicorns do not face the same pressure to adopt these allegedly suboptimal governance structures and therefore are not subject to the distorting incentives they allegedly impose. Rather, Unicorns tend to change boards only infrequently, and typically have large investors who have contractually fixed rights to appoint directors.

Corporate Culture. Finally, it is argued that public companies tend to develop a corporate culture that is itself an independent driver of excessive

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structure in some way. For an overview, see Lucian Bebchuk, *The Myth That Insulating Boards Serves Long-Term Value,* 113 Colum. L. Rev. 1637 (2013).

[129] Martin Lipton, *Bite the Apple; Poison the Apple; Paralyze the Company; Wreck the Economy,* Harv. L. Sch. Forum on Corp. Gov. & Fin. Reg. (Feb. 26, 2013); Strine, *supra* note 106, at 7–9, 26; Stout, *supra* note 109, at 70–71; Caleb Griffin, *The Hidden Cost of M&A*, 2018 Colum. Bus. L. Rev. 70, 12–27 (2018); William Bratton & Michael Wachter, *The Case Against Shareholder Empowerment*, 158 U. Pa. L. Rev. 653, 657–59 (2010).

[130] Andrew Ross Sorkin, *An Unusual Boardroom Battle, in Academia*, N.Y. Times Dealbook (Jan. 5, 2015, 9:42 PM), https://archive.nytimes.com/dealbook.nytimes.com/2015/01/05/an-unusual-board room-battle-in-academia/.

[131] On the first two effects, see, for example, K.J. Martijn Cremers et al., *Staggered Boards and Long-Term Firm Value, Revisited*, 126 J. Fin. Econ. 422 (2017). On the last effect, there are two steps: (1) De-staggering boards makes companies more susceptible to hedge fund activism, Michael Klausner, *Fact and Fiction in Corporate Law and Governance,* 65 Stan. L. Rev. 1325, 1360–61 (2013); Martijn Cremers et al., *Activist Hedge Funds and the Corporation,* 94 Wash. U. L. Rev. 261 (2016), and (2) hedge fund activism, in turn, has been shown to have some negative consequences for stakeholders. *E.g.*, Alexander I. Platt, *Beyond "Market Transparency": Investor Disclosure and Corporate Governance,* 74 Stan. L. Rev. 1393, 1432 n.196 (2022) (collecting sources).

risk-taking and other socially harmful conduct.[132] That is, the cumulative effect of all of the aforementioned forces is to create a set of values and behaviors that reflect the short-termist and risk-seeking incentives described above. This corporate culture then becomes an independent source of dangerous and harmful corporate behavior.

Unicorns are not subject to these forces and thus do not develop the same type of short-termist, risk-seeking corporate culture.

Scholars have connected these forces to some of the most devastating and socially harmful public company scandals and meltdowns of the last several decades—including the collapses of Enron and Worldcom,[133] the global financial crisis,[134] the BP oil spill,[135] the VW emissions scandal,[136] and the Wells Fargo "fake accounts" fiasco.[137]

B. Out of the Frying Pan . . .

To the extent it is correct, this literature represents a fundamental challenge to the articles calling for new securities regulation of Unicorns. Pushing Unicorns towards public company status won't help—and may even hurt—if that status brings with it a different, and maybe even more dangerous set of incentives.

This self-evidently applies to the proposals to mandate or nudge Unicorns towards public company status. Turning Unicorns into public companies does not seem likely to be helpful if it means these companies will drop one set of dangerous incentives and take on another.

This critique also applies to some of the "a la carte" proposals. For instance, facilitating more efficient trading of Unicorn shares (as Wansley suggests) may expose Unicorn managers to some of the same distortions and perverse effects that corporate governance scholars have long warned about in the context of public companies. With shares traded more efficiently, Unicorn executives may feel pressure from investors to sacrifice long-term growth, take excessive risk, and short-change compliance in order to drive

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[132] Luigi Guiso, *The Value of Corporate Culture,* 117 J. Fin. 60, 73–75 (2015).

[133] Jeffrey Gordon, *What Enron Means for the Management and Control of the Modern Business Corporation: Some Initial Reflections*, 69 U. Chi. L. Rev. 1233, 1234–35 (2002); William Bratton, *Enron and the Dark Side of Shareholder Value,* 76 Tul. L. Rev. 1275, 1283, 1326–27 (2002); Stout, *supra* note 109, at 68; Park, *supra* note 122, at 1017; Millon, *supra* note 120, at 893–97; Lynn Stout, *The Mythical Benefits of Shareholder Control*, 93 Va. L. Rev. 789, 806–08 (2007).

[134] John Armour, *Bank Governance*, in Oxford Handbook of Corporate Law and Governance 1108 (2016); Bratton & Wachter, *supra* note 129, at 661, 717–723; Bainbridge, *supra* note 114, at 103–04, 119.

[135] Stout, *supra* note 109, at 2; Miriam Cherry & Judd Sneirson, *Beyond Profit: Rethinking Corporate Social Responsibility and Greenwashing After the BP Oil Disaster,* 85 Tul. L. Rev. 983 (2011).

[136] John Armour, *VW Emissions Scandal: Lessons for Corporate Governance? (Part II)*, Oxford Bus. L. Blog (May 18, 2016).

[137] *See* Armour et al. *supra* note 108, at 3, 5, 18.

up the short-term stock price. More efficient trading may also lead Unicorns to tie executive compensation to the short-term stock price performance in the same way that public companies do—which brings its own risks. More efficient and liquid markets in Unicorn securities may even open these companies up to the risk of an activist hedge fund intervention—and the potentially dangerous incentives that this imposes.

Similarly, requiring Unicorns to make periodic financial disclosures (as several authors propose), would risk creating the same sort of "quarterly capitalism" distortions that scholars complain about in public companies. Unicorn managers might feel pressure to show steady progress on key metrics and make management decisions designed to achieve those results—sacrificing the long-term health of the company, causing harm to stakeholders, and perhaps even violating the law.

Accordingly, pressing forward with the Unicorn reforms would make sense only to the extent this literature is incorrect or the dangerous incentives are less severe than the parallel ones operating on Unicorns. I do not mean to definitively endorse the truth of the claims made by the stock-market short-termism literature, many of which are subject to ongoing debate. However, many proponents of new Unicorn regulations *do* seem to embrace the stock market short-termism criticism.[138]

[138] Dorothy Lund & Elizabeth Pollman, *The Corporate Governance Machine,* 121 COLUM. L. REV 2563, 2566, 2620–21 (2021) (warning that various institutional and legal constraints like the ones discussed above force *public* companies to adopt "potentially suboptimal" governance arrangements that can "destroy value" and produce "negative consequences for shareholders" and other stakeholders); Elizabeth Pollman, *Team Production Theory and Private Company Boards,* 38 SEATTLE U. L. REV. 619, 645 (2015) ("[T]he fact that private company stock is not publicly traded may also give the board some breathing room . . . . Reduced pressure to achieve quarterly earnings may allow the board to make trade-offs that enhance long-term firm value."); Donald Langevoort, *The Effects of Shareholder Primacy, Publicness, and Privateness on Corporate Cultures,* 43 SEATTLE U. L. REV. 377, 401–402 (2020) (stating that he is "reasonably well persuaded" by the argument that pervasive demands of shareholder wealth maximization—as channeled through the specific forces described above—creates a corrosive effect on the culture of public companies, leading to excessive risk-seeking and illegal behavior); DONALD LANGEVOORT, SELLING HOPE, SELLING RISK: CORPORATIONS, WALL STREET, AND THE DILEMMAS OF INVESTOR PROTECTION 106 (2016) ("The evidence is fairly substantial that most managers *do* focus heavily on short-term results."); Hillary Sale, *The New "Public" Corporation,* 74 LAW & CONTEMP. PROBS. 137, 146 (2011) (arguing that public company executive compensation is "tied to risk and can result in bad decisions, bad strategy and fraud," and helped incentivize excessive risk-taking by financial company executives that led to the 2008 financial crisis); Renee Jones, *How Irrational Actors in the CEO Suite Affect Corporate Governance*, 41 DEL. J. CORP. L. 713, 751–52 (2013) (warning that public company executive compensation practices promote "excessive" and "irrational" risks); Amy Deen Westbrook & David Westbrook, *Unicorns, Guardians, and the Concentration of the U.S. Equity Markets,* 96 NEB. L. REV. 688, 721 n.155 (2019) ("Being a public company . . . reduces management's operating flexibility because the press, and shareholders, may have a short-term focus on profitability that makes long-term goals difficult to achieve."); Ann Lipton, *ESG Investing, or, If You Can't Beat 'Em, Join 'Em,* RESEARCH HANDBOOK ON CORPORATE PURPOSE AND PERSONHOOD ("[S]hareholder primacy . . . may aggravate corporate antisocial tendencies by incentivizing managers to increase shareholders' profits at everybody else's expense."). Proponents of Unicorn reform have also highlighted separate reasons to worry that public companies are no better than Unicorns when it comes to some of the key dangerous character-

III. Would the Proposed Reforms Have Made a Difference?

To make the case that Unicorns are especially dangerous and in need of a new kind of securities regulation, the articles rely heavily on anecdotes about two prominent "bad" Unicorns—Uber and Theranos. Seven of the nine articles mention at least one of these two companies in their intros.[139] (Four of the intros mention both.) Three of these articles devote entire sections to one or both companies,[140] and most of them make high-wattage references to them to drill home the risks posed by Unicorns.[141] Some of the regulators who have urged the SEC to crack down on Unicorns have similarly emphasized these two anecdotes.[142]

istics they highlight. Jones, Irrational Actors, *supra* at 747–48 (showing that public company CEOs tend to be narcissistic and that this trait is linked to risk-seeking behavior and corporate fraud; and showing that they engage in "inappropriate personal relationships at work"); *id.* at 756–57 (explaining that "substance abuse problems . . . plague the corporate and financial sectors," discussing numerous examples drawn from public companies, and then pointing to research showing that this leads to "hyperbolic" discounting and heightened risk-seeking behavior); Jennifer Fan, *Innovating Inclusion: The Impact of Women on Private Company Boards,* 46 Fla. St. U. L. Rev. 345, 351 (2019) (noting that senior managers of public companies are predominantly male).

[139] Lipton and Georgiev mention neither company in the intro.

[140] Fan, *supra* note 11, at 632–37 (Uber); Winship, *supra* note 11, at 689–91 (Theranos); Wansley, *supra* note 11, at 1216–20 (both).

[141] Jones, *supra* note 11, at 187 ("Without concerted action to constrain founder misconduct we can expect to see more Ubers in the future."); Pollman, *supra* note 11, at 356 (Theranos "rings the alarm bell on securities fraud in the private market."); Fan, *supra* note 11, at 633 (describing Uber as the "poster child" of Unicorn misconduct); Lipton, *supra* note 11, at 522 ("Uber may be an extreme case, but it is not the only one; similar problems have infected other large startups, including . . . Theranos . . . ."); *id.* at 521 (describing Uber is the "classic example" of Unicorn misconduct); Wansley, *supra* note 11, at 1258 ("[T]he misconduct at Theranos [and] Uber . . . harmed third parties irreversibly."); Langevoort & Sale, *supra* note 11, at 1347 ("[I]n recent years there have been so many troubles, from gross embarrassments to allegations of outright criminality, at companies like Uber [and] Theranos . . . ."); *id.* at 26 (warning of "distortions like those in Uber [and] Theranos"); Westbrook, *supra* note 11, at 572 ("High-profile excesses like those reported at Uber [and] Theranos"); Georgiev, *supra* note 11, at 270–71 (The "informational problems raised by unicorns . . . quickly morphed into governance problems, as illustrated by the multiple scandals at . . . Uber, Theranos, and elsewhere."); *id.* at 289 ("There is also the potential for investor losses due to poor corporate governance, inadequate information, and poor monitoring, as illustrated by the cases of . . . Uber, Theranos, and others."); *see also* George S. Georgiev, *Securities Laws Are Speed Bumps that Prevent Uber-Sized Wrecks*, The Hill (Jun. 29, 2017), https://thehill.com/blogs/pundits-blog/finance/340048-securities-laws-are-speed-bumps-that-prevent-uber-sized-wrecks/; Renee Jones, *Congressional Testimony: Examining Private Market Exemptions as a Barrier to IPOs and Retail Investment* (2019) (Theranos illustrates "risks inherent in the unicorn governance model."); Ann Lipton, *Thinking About Theranos,* Business Law Prof Blog (Sept. 24, 2016), https://lawprofessors.typepad.com/business_law/2016/09/thinking-about-theranos.html ("Theranos illustrates exactly why we subject companies to the IPO process."); Matt Wansley, *The Next Theranos Should Be Shortable*, TechCrunch (Sept. 7, 2021, 1:53 PM), https://techcrunch.com/2021/09/07/the-next-theranos-should-be-shortable/. One of the articles refers to Uber on almost three quarters of all pages.

[142] Lee, *supra* note 93, at nn.4, 17, 19 & 21 (discussing Uber and Theranos) Crenshaw, *Big Issues, supra* note 105 (discussing Theranos).

Relying on salient examples of corporate malfeasance to justify new regulations is *de rigueur* in securities regulation.[143] But, when the justification for a policy reform is based on a few key anecdotes, it seems fair to ask whether the reform might have actually been useful in preventing or mitigating the harm described in those anecdotes.

Most of the articles calling for closer regulatory scrutiny of Unicorns fail to answer this question. Notwithstanding their extensive reliance on Uber and Theranos to establish that there is a fundamental problem with Unicorns causing social harm, most of these authors do not explain how their proposed reforms might have plausibly mitigated the harms flowing from those companies.

This Part addresses this question. I conclude that it is highly questionable that any of the proposed solutions would have mitigated any significant harm from Uber or Theranos.[144]

A. Uber: The "Poster Child" of Unicorn Misconduct

Uber is a "technology platform" that operates "proprietary technology applications supporting a variety of offerings."[145] Uber is most well-known for its ridesharing service, but the company also operates food delivery and freight services.[146] Founded in 2009, Uber achieved "Unicorn" status in 2013 and remained private until its May 2019 IPO.[147] As of this writing, the company operates in 72 countries around the world[148] and has a market capitalization of about $55 billion.[149]

Although most of these articles agree that Uber was a source of significant social harm during its corporate adolescence, there is disagreement as to what this harm was or how it relates to Uber's regulatory status. Several articles refer vaguely to "scandals" at the company. Only a few of these articles both identify specific harms and directly argue that their proposed

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[143] *Cf.* LANGEVOORT, *supra* note 138, at 166 (predicting, in 2016, that "it would take only one big private company scandal—in the right political environment—to call into question a regulatory regime that lets companies choose whether they want legal accountability or not" but warning that "[n]o doubt some of that response to scandal would be bad regulation, even quackery").

[144] There are also the standard problems associated with reliance on anecdotes—such as whether the problems identified are generalizable to most or many other similarly situated companies.

[145] Uber Technologies, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 For the fiscal year ended December 31, 2020 (Form 10-K) (December 31, 2020), at 4.

[146] *Id.* at 4–5.

[147] *Id.* at 11, 80.

[148] Uber Technologies, Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2021 (Form 10-K), at 4.

[149] Uber Technologies, Inc., YAHOO FINANCE (accessed January 9, 2023), https://finance.yahoo.com/quote/UBER/.

reforms would have mitigated those harms. But these arguments do not hold up to scrutiny.[150]

1. Harmed Investors

Only two of the nine articles emphasize harms to Uber's private ***investors***.[151] That's unsurprising, given that Uber's private investors generally benefitted from the company's explosive growth during its Unicorn period. From its founding in 2009 through its May 2019 IPO, the single exception to Uber's consistently explosive increasing valuation came between Fall 2016 and February 2018 when, following various scandals, Uber's valuation dropped from $68 billion (August 2016) to $54 billion.[152] But Uber's valuation rebounded almost immediately. By August 2018, it was back up above the previous high-water mark to $76 billion,[153] where it stayed through the IPO. This investment performance does not obviously call out for any kind of regulatory intervention.[154]

It's true, as one article points out, that some investors were harmed in the course of Uber's May 2019 IPO, when the stock dropped on the first day of trading from $45 IPO price to $42 and remained below the IPO price for

[150] A separate flaw with the articles' treatment of Uber is their failure to address the comparator case of Lyft. Lyft emerged at around the same time as Uber, pursued a very similar business strategy, faced (and continues to face) some of same legal and regulatory hurdles, stayed private like Uber before going public in Market the same year as Uber, had a similarly "broken" IPO with the stock price dropping sharply on the first day of trading, and remaining below the IPO price for an extended time, had a male-dominated leadership team, raised funds from similar types of venture capital firms, and operated under the same securities regulation regime. And yet the reputations of the two companies could not be more different. Given all this, Lyft would seem to pose an appealing comparison case study that might unlock some answers about the nature, causes, and solutions for Unicorn malfeasance. For instance, perhaps the divergence is best explained by the different personalities of the firms' leaders. Lyft's leaders Logan Green and John Zimmer have been described as "low profile," "mild-mannered," "quiet," and "nice"—not words one often hears used to describe Uber's founder/CEO Travis Kalanick. Alternatively, perhaps the divergence reflects Uber's much more substantial growth and ambition. When Lyft went public in 2019, it operated in just one country outside the U.S. (Canada) and stated $2.2 billion in revenue for 2018. When Uber went public the same year, it operated in 62 countries outside of the U.S. and stated $11.2 billion in revenue for 2018. Or, perhaps the divergence is simply a product of savvy public relations by Lyft. A full exploration of these and other possibilities may yield important insights into the causes of Unicorn dysfunction and the optimal responses—but such exploration is beyond the scope of this paper.

[151] Wansley, *supra* note 11, at 1220; Georgiev, *supra* note 11, at 289–90; *see also* Winship, *supra* note 11, at 711 nn.256, 258 & 260 (discussing investor lawsuits); Jones, *supra* note 11, at 168, 186 n.117 (same); Winship, *supra* note 11, at 707 (discussing investors' limited access to info); Pollman, *supra* note 11, at 381 (same).

[152] Wansley, *Taming*, *supra* note 11, at 1220; *see also Irving Firemen's Relief & Ret. Fund v. Uber Techs., Inc.*, 998 F.3d 397, 402 (9th Cir. 2021) (noting that "several funds holding stakes in Uber wrote down the value of their Uber holdings").

[153] Scott Austin et al., *The Billion Dollar Startup Club,* WALL ST. J. (Feb. 18, 2015), http://www.panoramic.com/wp-content/uploads/2015/03/The-Billion-Dollar-Startup-Club.pdf.

[154] A securities class action against Uber based on this valuation drop was dismissed for failure to allege materially misleading statements. *Irving Firemen's Relief & Ret. Fund v. Uber Techs.*, 398 F. Supp. 3d 549, 560 (N.D. Cal. 2019) *aff'd* 998 F.3d 397 (9th Cir. 2021).

most of the ensuing 18 months.[155] But, for many of the company's private investors, even a sale at $42 would still have been a gigantic win.[156] Moreover, flaws in the IPO process seem to point to a different course of reform. Uber's stock price eventually recovered and traded above the IPO price from late 2020 through much of 2021—before dropping below it again.

2. Harmed Employees

Four of the articles emphasize harms to Uber's employees in the form of sexual harassment and discrimination.[157] However, only one author (Lipton) directly asserts that her proposed reform (new disclosures) would have mitigated this harm. Below, I explain why I disagree with Lipton and also why the other proposed reforms (tradability, whistleblower protections, and SEC enforcement) would also likely not have made any difference in preventing or mitigating this particular harm.[158]

a. More Disclosure

Lipton claims that, if Uber had been subject to broader disclosure obligations applicable to public companies, "it is unlikely Uber's toxic work environment could have persisted, or grown to the proportions it eventually reached."[159] She says that because "Uber would have had to disclose its

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[155] Langevoort & Sale, *supra* note 11, at 1357.

[156] For instance, Uber's 2014 investors (including large mutual funds like Vanguard, BlackRock, and Fidelity) paid just $15.41 per share—and so, even if they sold after the IPO drop-off, these investors would have still made nearly a 300% return on their investment in five years. Rolfe Winkler & Greg Bensinger, *Mutual Funds Mark Down Uber Investments by Up To 15%,* WALL ST. J. (Aug. 22, 2017, 8:33 PM), https://www.wsj.com/articles/mutual-funds-mark-down-uber-investments-by-up-to-15-1503443267.

[157] Westbrook, *supra* note 11, at 516; Jones, *supra* note 11, at 165–66, 179; Lipton, *supra* note 11, at 521; Langevoort & Sale, *supra* note 11, at 1356–57.

[158] In a 2017 op-ed, George Georgiev asserts that there is "reason to think" that sexual harassment (and other scandals) could have been prevented if Uber had been public. George Georgiev, *Securities Laws Are Speed Bumps That Prevent Uber-Sized Wrecks*, THE HILL (June 29, 2017, 12:20 PM), https://thehill.com/blogs/pundits-blog/finance/340048-securities-laws-are-speed-bumps-that-prevent-uber-sized-wrecks/. But Georgiev's reasons for thinking this are obscure. He points to the recommendations made by Attorney General Eric Holder following his internal investigation into Uber's culture, including "strengthening the independence of the board of directors; enhancing Uber's audit committee, internal controls, and record-keeping procedures; and setting up a robust internal complaint process." *Id*. Of these reforms, the last one seems most directly tailored to detecting and preventing sexual harassment. Yet, it's not clear what this reform has to do with public company status. Moreover, it seems very telling that the vast majority of recommendations in the Holder report have nothing to do with public company status—including numerous reforms specifically tailored to reining in Uber's then-CEO Travis Kalanick, reforms regarding Uber's Head of Diversity, reforms designed to tie executive compensation to DEI metrics, reformulating Uber's "14 cultural values," mandatory trainings, establishment of diversity advisory board, and more. Biz Carson, *Here's the Full 13-Page Report that's Rocking Uber's Culture to the Core*, BUS. INSIDER (June 13, 2017, 1:16 PM), https://www.businessinsider.com/uber-holder-report-results-investigation-harassment-bro-culture-2017-6.

[159] Lipton, *supra* note 11, at 521.

sources of income and risks to its operations, including legal risks" and "its Board of Directors would have had to sign off on any disclosures Uber made," the "board members would have been incentivized to ensure that any deficiencies were corrected" in order to avoid the "unpleasant choices of publicly announcing Uber's violations of the law and systemically unstable culture, or risking personal liability for false statements."[160]

To the contrary, I believe a well-advised board member would understand that the risk of liability from remaining silent would be virtually non-existent. Since the SEC had never pursued an enforcement action based on misstatements or omissions regarding sexual harassment,[161] any risk would have been from *private* securities litigation. But, while Item 303 of Regulation S-K may impose a duty to disclose certain sexual harassment allegations or complaints,[162] there is a circuit split as to whether a violation of this rule is legally actionable for private plaintiffs.[163] A more likely avenue for plaintiffs would be to allege that the company's failure to disclose sexual harassment was a materially misleading omission when viewed in context with general affirmative statements that virtually all companies make in public corporate codes of ethics or code of conduct (incorporated into securities disclosures) committing to prevent and eliminate sexual harassment from the workplace.

Even so, the risk of liability for failing to disclose sexual harassment is vanishingly low. Not a single #MeToo securities fraud case has survived a motion to dismiss based on either pure non-disclosure (Item 303) or non-disclosure coupled with generic anti-harassment statements. Actually, most of the cases have not survived a motion to dismiss on *any* grounds.[164] But, of the few cases that have made it past this stage, all of them have alleged some specific affirmative corporate misstatements denying the sexual harassment

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[160] *Id.* at 521–22.

[161] Susan Saltzstein & Jocelyn Strauber, *Expanding Theories of Liability in the #MeToo Era*, Skadden's 2019 Insights (Jan. 17, 2019), https://www.skadden.com/-/media/files/publications/2019/01/2019-insights/expanding_theories_of_liability_in_the_metoo_era.pdf ("[W]e are unaware of any such actions to date. . . ."). Since this paper was accepted for publication, the SEC has brought and settled charged against a company based on underlying allegations of sexual harassment, but it still remains to be seen whether this will be a regular part of the SEC's enforcement agenda. *See* SEC, Press Release, Activision Blizzard to Pay $35 Million for Failing to Maintain Disclosure Controls Related to Complaints of Workplace Misconduct and Violating Whistleblower Protection Rule (Feb. 3, 2023).

[162] Daniel Hemel & Dorothy S. Lund, *Sexual Harassment and Corporate Law*, 118 Colum. L. Rev. 1583, 1637 (2018).

[163] *Compare* Stratte-McClure v. Morgan Stanley, 776 F.3d 94, 100 (2d Cir. 2015) *with* Oran v. Stafford, 226 F.3d 275, 287 (3d Cir. 2000), *In re* NVIDIA Corp. Sec. Litig., 768 F.3d 1046, 1054 (9th Cir. 2014), *and* Carvelli v. Ocwen Fin. Corp., 934 F.3d 1307, 1330–31 (11th Cir. 2019).

[164] *E.g.*, Retail Wholesale & Dep't Store Union Loc. 338 Ret. Fund v. Hewlett-Packard Co., 845 F.3d 1268, 1268–69 (9th Cir. 2017); Ferris v. Wynn Resorts Ltd., 462 F. Supp. 3d 1101, 1102 (D. Nev. 2020); Lopez v. CTPartners Exec. Search Inc., 173 F. Supp. 3d 12 (S.D.N.Y. 2016); Ok. L. Enf't Ret. Sys. v. Papa John's Int'l, Inc., 517 F.Supp.3d 196, 197 (S.D.N.Y. 2021); Constr. Laborers Pension Tr. for S. Cal. v. CBS Corp., 433 F. Supp. 3d 515, 515–16 (S.D.N.Y. 2020).

that were made outside the context of mandatory disclosures.[165] Only *a single case* seems to have survived a motion to dismiss that relied even in part on any sort of statements made in securities disclosures—generic anti-harassment statements in the corporate Code of Conduct[166]—but, even in this outlier case,[167] the plaintiffs *also* pointed to much more specific statements by the company "expressly 'den[ying] the allegations'" of harassment.[168] For a board member, the lesson from these cases seems clear: just keep quiet.[169]

Even if a director worried that some plaintiff *may* be able to survive a motion to dismiss based on a pure failure to disclose (or a failure in conjunction with generic affirmative anti-harassment statements), the director's actual risk of liability would still be virtually nonexistent. Although private securities lawsuits do frequently name corporate directors and officers (in addition to the company itself), these cases invariably settle and the named individuals virtually never make any out-of-pocket contributions (due to the combination of corporate indemnification and D&O insurance).[170]

Thus, Uber's lack of mandatory disclosure just doesn't seem to be an important factor in explaining why Uber's culture of sexual harassment came to light when it did—and not earlier. The key factor, instead, has nothing to do with securities laws and everything to do with shifting societal norms. As Lipton has recently written elsewhere, "allegations that a company concealed sexual harassment by a high-level executive would likely be more relevant to investors today than it would have been even a few years ago."[171] One study found that the rise of #MeToo in 2017 (the same year Uber's sexual harassment scandal broke) generated a ***four-fold*** increase in the like-

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[165] *E.g.*, Constr. Laborers Pension Tr. for S. Cal., 433 F. Supp. 3d 515 at 515 (dismissing all claims based on generic corporate good conduct statements and allowing only claims based on statements by CEO at an industry event specifically regarding the events in question to proceed).

[166] *In re* Signet Jewelers Ltd. Sec. Litig., No. 16 CIV. 6728 (CM), 2018 WL 6167889, at *17 (S.D.N.Y. Nov. 26, 2018).

[167] Kevin LaCroix, *Signet Jewelers Settles #MeToo-Related Securities Suit for $240 Million*, D&O DIARY (Mar. 29, 2020) ("the first (and certainly the most significant) settlement in a #MeToo related securities suit").

[168] *In re* Signet Jewelers Ltd. Sec. Litig., 389 F. Supp. 3d 221, 231 (S.D.N.Y. 2019); *see also In re* Signet Jewelers Ltd. Sec. Litig., 2018 WL 6167889 at *17 (S.D.N.Y. Nov. 26, 2018) (denying motion to dismiss relying in part on defendants' specific denials of specific allegations of sexual harassment).

[169] I am emphatically NOT endorsing this state of affairs, but merely providing the analysis I think a lawyer would provide if asked to evaluate their SECURITIES litigation risk based on non-disclosure. Investors have been more successful in pursuing derivative state-law breach of fiduciary duty claims based on underlying allegations of sexual harassment, but these claims are not premised on any violation of federal disclosure duties.

[170] Michael Klausner, *Personal Liability of Officers in US Securities Class Actions*, 9 J. CORP. L. STUDS. 349, 357, 359, 365 (2009); Bernard Black et al., *Outside Director Liability*, 58 STAN. L. REV. 1055, 1057 (2006). *But see* Alexander Platt, *Index Fund Enforcement,* 53 U.C. DAVIS L. REV. 1453, 1476–77 (2020) (collecting empirical research showing that securities class actions do lead to some indirect negative consequences for board members).

[171] Ann M. Lipton, *Fact or Fiction: Flawed Approaches to Evaluating Market Behavior in Securities Litigation,* 20 TRANSACTIONS: TENN. J. BUS. L. 741, 762 n.100 (2019).

lihood that any given company will have a sexual harassment scandal exposed.[172] Many public companies have had systemic/long-running problems with sexual harassment exposed, notwithstanding being subject to the full complement of securities regulations.[173] This societal shift seems to be a much more important explanation than Uber's private company status.

b. More Tradability

It is highly questionable that more tradability would have mitigated Uber's sexual harassment harms. First, before the turning-point year of 2017 (when Uber's sexual harassment issues first came to light), short-sellers might not have expected information about sexual harassment issues that did not directly implicate the CEO to meaningfully move the company's stock price.[174]

Second, there was already an abundance of well-resourced actors with high-powered incentives to seek out and publicize negative information about the company. For instance, Uber's rival Lyft had an enormous financial incentive to dig up and publicize negative information about Uber—and did so.[175] Lyft also pursued a savvy PR strategy following the disclosures of negative information about Uber, effectively amplifying the negative media coverage of its competitor and casting itself in a more positive light.[176] That

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[172] Mads Borelli-Kjaer et al., *#MeToo: Sexual Harassment and Company Value,* 67 J. Corp. Fin. 1, 19 (2021).

[173] *See id.* at 2, 9, 30–34 (collecting examples).

[174] *Id.* at 1 (finding a four-fold increase in the likelihood of disclosure of corporate sexual harassment after the #MeToo movement began in 2017 and finding that negative returns after a disclosure of a sexual harassment scandal are "considerably" larger when the scandal involves the CEO).

[175] Pui-Wing Tam, *Lyft Drives Uber Competition with False-Order Allegations*, Bloomberg (Aug. 12, 2014, 4:32 PM), https://www.bloomberg.com/news/articles/2014-08-12/lyft-drives-uber-competition-with-allegations-of-canceled-rides (Lyft publicly accusing Uber of engaging in unethical and possibly illegal behavior); Dan Levine & Joseph Menn, *Uber Checks Connections Between Hacker and Lyft*, Reuters (Oct. 8, 2015, 1:10 AM), https://www.reuters.com/article/us-uber-tech-lyft-hacking-exclusive/exclusive-uber-checks-connections-between-hacker-and-lyft-idUSKCN0S20D420151008 (Uber accusing Lyft's Chief Technology Officer of hacking into Uber to steal private company information); Joseph Menn & Dan Levine, *Exclusive: U.S. Justice Dept Probes Data Breach at Uber,* Reuters (Dec. 18, 2015, 2:52 PM), https://www.reuters.com/article/us-uber-tech-lyft-probe-exclusive/exclusive-u-s-justice-department-probes-data-breach-at-uber-sources-idUSKBN0U12FF20151218 (DOJ investigation into Lyft's possible involvement in Uber data breach).

[176] Katy Steinmetz, *How Lyft Is Capitalizing on Uber's Scandals*, Time (Mar. 28, 2017), https://sg.news.yahoo.com/lyft-capitalizing-uber-scandals-114411332.html; Kevin Rose, *As Uber Stumbles, Lyft Sees an Opening, and Bites Its Tongue,* N.Y. Times (Jun. 27, 2017), https://www.nytimes.com/2017/06/27/business/lyft-uber-john-zimmer.html; Maya Kosoff, *The Lyft Guys Reveal Their Kinder Gentler Plan to Crush Uber,* Vanity Fair (Sept. 19, 2017), https://www.vanityfair.com/news/2017/09/lyft-co-founders-interview; Olivia Solon, *Is Lyft really the 'woke' alternative to Uber?*, The Guardian (Mar. 29, 2017, 7:00 AM), https://www.theguardian.com/technology/2017/mar/29/is-lyft-really-the-woke-alternative-to-uber.

PR strategy proved enormously successful.[177] Lyft's investors shared the same incentive—and one of these investors, Carl Icahn,[178] made a career out of such hard-nosed tactics. The taxi and chauffer industry and its partners also had powerful incentives to dig up negative information on Uber. And, based on the huge volume of coverage devoted to the company, the media evidently believed the public was very interested in stories about Uber—good and bad—notwithstanding its private status.[179]

Third, there were also some indirect ways for public company investors to make profitable trades based on information about Uber—by investing in public companies associated with the taxi industry,[180] or rental car industries.[181]

c. More Whistleblowers

More protections for internal-reporting Unicorn whistleblowers would not likely have mitigated Uber's sexual harassment. At least one whistleblower courageously and repeatedly attempted to bring rampant sexual harassment to the attention of Uber's senior managers even without the proposed new legal protections to no avail.[182] Further, the problem apparently went all the way up the chain at the company—another reason to wonder whether internal whistleblower reporting would have helped.[183] And

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[177] Heather Somerville, *Study Finds Uber's Growth Slows After Year of Scandal; Lyft Benefits*, REUTERS (May 14, 2018, 6:14 PM), https://www.reuters.com/article/us-uber-growth/study-finds-ubers-growth-slows-after-year-of-scandal-lyft-benefits-idUSKCN1IF31A.

[178] Mike Isaac & Alexandra Stevenson, *Carl Icahn Invests $100M in Lyft*, N.Y. TIMES (May 15, 2015), https://www.nytimes.com/2015/05/16/technology/carl-icahn-invests-100-million-in-lyft.html.

[179] According to Lexis, in 2016 (the year before Uber's major scandals broke) the *Wall Street Journal* ran 252 stories mentioning Uber. I reached this number by searching in Lexis' database for articles appearing in the *Wall Street Journal* in 2016 that mentioned "company(Uber)."

[180] Steven Russolillo, *Here's One Way to Bet on Uber's Success*, WALL ST. J. BLOG (Jun. 19, 2014, 4:07 PM), https://www.wsj.com/articles/BL-MBB-22933 (suggesting investors could indirectly bet on Uber by shorting Medallion Financial Inc., a publicly traded company that services loans used to purchased city-issued "medallions" that are required to operate yellow cabs); Mark Perry, *Schumpeterian Creative Destruction – The Rise of Uber and the Great Taxicab Collapse*, AEIDEAS (Sept. 2, 2015), https://www.aei.org/carpe-diem/schumpeterian-creative-destruction-the-rise-of-uber-and-the-great-taxicab-collapose (attributing a collapse in the Medallion Financial stock price to the "Uber effect").

[181] *Cf.* Jonathan Laing, *Avis Shares Could Double by Late 2017*, BARRON'S (Nov. 3, 2015), https://www.barrons.com/articles/avis-shares-could-double-by-late-2017-1446267562 (attributing selloff in car rental stocks in part to "the effect of possible competition from Uber"); Manikandan Raman, *Uber is Beating Out Rental Car Companies in a Surprising Market*, BENZINGA (Apr. 21, 2016), https://www.yahoo.com/entertainment/uber-beating-rental-car-companies-173924531.html (similar); Leslie Norton, *Hertz Stock Looks Ready for the Fast Lane*, BARRON'S (Aug. 8, 2015, 8:47 AM), https://www.barrons.com/articles/buy-hertz-stock-pick-htz-barrons-51641499356 (discussing competitive threat to rental car industry posed by ride sharing).

[182] SUSAN FOWLER, WHISTLEBLOWER: MY JOURNEY TO SILICON VALLEY AND FIGHT FOR JUSTICE AT UBER 120–89 (2020) (describing numerous internal reports filed by the author complaining of sexual harassment at Uber, starting in December 2015).

[183] *Id.* at 181–85.

reporting to the SEC would not have helped, since the SEC had never filed any action based on sexual harassment.[184]

d. More SEC Enforcement

More SEC enforcement would not likely have mitigated Uber's sexual harassment harm. Again, before 2022 I am not aware of any SEC enforcement action based on any securities law violation linked to sexual harassment.[185] Expanding the agency's footprint in the Unicorn arena therefore does not seem likely to deter sexual harassment.[186]

3. Harmed Legal Systems

Many of the articles focus on harms associated with Uber's non-compliance with laws related to its core business operations—including Uber's non-compliance with taxi laws that made Uber's core UberX service illegal,[187] Uber's secret "Greyball" program designed to deceive the regulators charged with enforcing those laws,[188] and Uber's efforts to classify its drivers as non-employees.[189] Again, I do not believe any of the proposed reforms would have made a positive difference.

Renee Jones argues that broader disclosure would have deterred Uber's lawbreaking behavior because "[m]aterial legal risks must be disclosed in a company's public offering prospectus" and "because these compliance risks go to the core of the companies' operations, their unresolved status would make it difficult for underwriters to market their shares."[190]

I disagree. Uber's non-compliance with taxi laws was very well-known from the company's inception,[191] as was its (legally debatable) classification

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[184] Saltzstein & Strauber, *supra* note 161, at 3.

[185] *Id.*

[186] As explained above, since this paper was accepted for publication, the SEC has brought and settled charged against a company based on underlying allegations of sexual harassment, but it still remains to be seen whether this will be a regular part of the SEC's enforcement agenda. *Supra* note 161.

[187] Jones, *supra* note 11, at 181; Westbrook, *supra* note 11, at 559 n.313; *see also* Lipton, *supra* note 11, at 521 (discussing Uber's "unusually pugnacious relationship with regulators").

[188] Jones, *supra* note 11, at 166; Wansley, *supra* note 11, at 1219–20; Westbrook, *supra* note 11, at 516–17.

[189] Fan, *supra* note 11, at 600; Jones, *supra* note 11, at 181; Georgiev, *supra* note 11, at 266.

[190] Jones, *supra* note 11, at 181–82.

[191] Lora Kolodny, *UberCab, Now Just Uber, Shares Cease and Desist Orders,* TECHCRUNCH (Oct. 24, 2010, 4:59 PM), https://techcrunch.com/2010/10/25/ubercab-now-just-uber-shares-cease-and-desist-orders; Brian Chen, *A Feisty Start-Up Is Met with Regulatory Snarl,* N.Y. TIMES (Dec. 2, 2012), https://www.nytimes.com/2012/12/03/technology/app-maker-uber-hits-regulatory-snarl.html; Matt Flegenheimer & Brian Chen. *As a Taxi-Hailing App Comes to New York, Its Legality Is Questioned,* N.Y. TIMES (Sept. 4, 2012), https://www.nytimes.com/2012/09/05/nyregion/as-ubers-taxi-hailing-app-comes-to-new-york-its-legality-is-questioned.html; Brian X. Chen, *Uber, an App That Summons A Car, Plans a Cheaper Service Using Hybrids,* N.Y. TIMES (Jul. 1, 2012), https://www.nytimes.com/2012/07/02/technology/uber-a-car-service-smartphone-app-plans-cheaper-service.html; Patrick Clark, *Uber Sued for*

of "driver-partners" as non-employees.[192] Given that it was well known at the time that Uber was violating the law, it is hard to see why making the same information available in a different format would have made any difference.[193]

Greyball, by contrast, was a secret. Still, expanded disclosure obligations might not have prevented Uber from initiating the program or otherwise mitigated the amount of lawbreaking. Public companies constantly make generic statements committing to full compliance with the law even as they engage in lawbreaking activities.

Wansley argues that Greyball would have been revealed faster if Uber's shares were traded on a more efficient market.[194] But, as mentioned above, there was an abundance of well-resourced actors with high-powered incentives to dig up and publicize negative information about Uber—they just failed to find it.

In a 2017 op-ed, Georgiev argues that Uber's deception of authorities worldwide could have been prevented if it had been forced to take on some of the mandatory corporate governance features imposed on public companies by federal securities laws, including stronger internal controls.

Fair enough. But, the most fundamental response to Georgiev—and to Wansley and Jones—is that even if any of these things could have sped up disclosure of (or even prevented) Greyball, it's not at all clear that this is a worthwhile goal—much less something we should be reorienting our entire securities regulation regime around. Greyball was part of Uber's successful efforts to expand its services.[195] It seems reasonable to see this expansion as generally beneficial to Uber's investors, employees, consumers, and even society at large.[196] As Elizabeth Pollman has argued in other work, when corporate lawbreaking leads to socially valuable legal reforms, there is a good case for tolerating or even encouraging such "corporate disobedience."[197]

Unlawful Business Practices in San Francisco, OBSERVER (Nov. 14, 2012, 1:11 PM), https://observer.com/2012/11/uber-sued-for-unlawful-business-practices-in-san-francisco; Adam Clark Estes, *Uber is Apparently Illegal Almost Everywhere,* THE ATLANTIC (Dec. 2, 2012), https://news.yahoo.com/uber-apparently-illegal-almost-everywhere-051218655.html.

[192] O'Connor v. Uber Techs., Inc., 2013 WL 6354534, at *6 (N.D. Cal. Dec. 5, 2013); Alatraqchi v. Uber Techs., Inc., 2013 WL 4517756, at *4–5 (N.D. Cal. Aug. 22, 2013).

[193] Jones' argument that underwriters would have balked at these unresolved compliance risks seems to be belied by the fact that Uber's 2019 registration statement flags these compliance issues and was underwritten by many investment banks. Uber Technologies, Inc., Form S-1 (2019) at 35, 61, 62.

[194] Wansley, *supra* note 11, at 1223–24.

[195] Wansley, *supra* note 11, at 1219–20.

[196] *Cf.* Ryan Calo & Alex Rosenblat, *The Taking Economy: Uber, Information, and Power,* 117 COLUM. L. REV. 1623 (2017) (raising concerns about the ability of sharing economy firms like Uber to leverage access to information about users to "mislead, coerce, or otherwise disadvantage" participants, but not arguing that participants would be better off without Uber).

[197] *See* Elizabeth Pollman, *Corporate Disobedience,* 68 DUKE L.J. 709, 716 (2019); *see also* Abraham Cable, *Institutionalized Disruption: The Rise of the Reformer Startup,* 12 HASTINGS BUS. L.J. 1 (2015); Elizabeth Pollman & Jordan Barry, *Regulatory Entrepreneurship,* 90 S. CAL. L. REV. 383 (2017).

Other than taxi and chauffer drivers, it's not clear who would benefit from a system calibrated to "solve" problems like Greyball.[198]

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A 2019 *Business Insider* report lists "49 of the biggest scandals in Uber's history."[199] That's a lot of scandals for a company still less than ten years old. Searching for regulatory changes to mitigate the underlying issues that led to these scandals going forward is an important project. But I do not see a compelling reason to think that the proposed new securities regulations would have made a positive difference.

B. *Theranos: "Ringing the Alarm Bell on Fraud in the Private Market"*

Theranos was a blood diagnostics company founded in 2003 by Stanford dropout Elizabeth Holmes.[200] The company vowed to revolutionize the diagnostics industry using novel technology capable of running a large battery of blood tests on "just a drop of blood."[201] After raising enormous sums of money, attracting luminaries to join its board of directors, signing partnerships to bring its technology into stores operated by Walgreens and Safeway, and receiving glowing media coverage, the company crashed and burned when it was revealed that its technology did not work. Among the many constituents who suffered as a result are the consumer-patients who made personal healthcare decisions in reliance on Theranos' faulty tests.[202] Since 2015, the company, its leaders, and its associates and partners have been subjected to a massive amount of criminal, regulatory, and private enforcement actions.[203]

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[198] For careful treatment of this topic including an application to Uber, see Pollman, *supra* note 197, at 732–35. I recognize that the point is controversial and reasonable minds can differ. For instance, some observers may find intrinsic harm from a program like Greyball. Even so, the question is whether this harm is the sort of thing that would justify transforming of our securities regulation regime (assuming doing so would prevent it).

[199] Kate Taylor & Benjamin Goggin, *49 of the Biggest Scandals in Uber's History,* INSIDER (May 10, 2019).

[200] JOHN CARREYROU, BAD BLOOD: SECRETS AND LIES IN A SILICON VALLEY STARTUP 13–14 (2018).

[201] *Id.* at 19, 155, 191, 219.

[202] A class action on behalf of injured patients against Theranos remains pending. *In re* Ariz. Theranos, Inc., Litig., 2020 WL 5435299, at *11 (D. Ariz. Mar. 6, 2020) (certifying the class).

[203] Minute Entry 1236, United States v. Holmes, 18-cr-258 (N.D. Cal. Jan. 3, 2022) (recording jury verdict in federal criminal fraud trial finding CEO Elizabeth Holmes guilty); Minute Entry 1508, United States v. Holmes, 18-cr-258 (N.D. Cal. Jul. 7, 2022) (recording jury verdict in federal criminal fraud trial finding COO Sunny Balwani guilty); SEC v. Holmes, 18-cv-1602 (N.D. Cal.) (settled SEC enforcement action); Letter from CMS to Theranos Inc., *Re: Imposition of Sanctions,* (Jul. 7, 2016); *In re* Ariz. Theranos, Inc., Litig., 2020 WL 5435299 (D. Ariz. Mar. 6, 2020) (consumer class action); Colman v. Theranos, Inc., 325 F.R.D. 629 (N.D. Cal. 2018) (securities class action); Walgreen Co. v. Theranos, Inc., 18-cv-989 (D. Del. Jul. 2, 2018) (breach of contract suit filed by Walgreens); Press Release, *Faruqi &*

Notwithstanding their extensive reliance on Theranos to establish the dangers of Unicorns and the need for new securities regulation, the articles mostly fail to argue how their proposed reforms would have mitigated the harms from Theranos. As I show below, it's unlikely that they would have made any positive difference.[204]

1. More Disclosure

None of the articles advocating for expanded disclosure directly argues that this would have mitigated the Theranos disaster. Wansley argues that "[i]f Theranos had disclosed accurate financial statements, and analysts had scrutinized them, Holmes would have found it harder to conceal the true state of the company's technology."[205] But Holmes and others evidently were quite comfortable lying to the media,[206] doctors,[207] patients,[208] regulators,[209] investors,[210] business partners,[211] and their own board of directors.[212] It seems

Faruqi, LLP is Investigating Walgreens Boots Alliance, Inc. WBA on Behalf of Its Shareholders (Jun. 16, 2016, 9:55 AM), https://www.prnewswire.com/news-releases/faruqi—faruqi-llp-is-investigating-walgreens-boots-alliance-inc-wba-on-behalf-of-its-shareholders-300285827.html (discussing investigation focusing on "whether the Company's Board of Directors and/or its officers committed mismanagement and breached their fiduciary duties in connection with the Company's partnership with and investment in Theranos Inc"); Complaint, Hays v. Almeida, C.A. No. 2018-0728 (Del. Ch. Oct. 9, 2018) (derivative suit against Walgreens based on Theranos partnership).

[204] Another concern is that Theranos may be *sui generis*. Among all the examples cited in the Unicorniphobia articles, Theranos stands out for the all-encompassing nature of its misconduct, the seriousness of the harms it caused, and the consequences it faced after the misconduct was uncovered. The company's whole existence was premised on technology that never existed. *E.g.*, Westbrook, *supra* note 11, at 517; Jones, *supra* note 11, at 167; Wansley, *supra* note 11, at 1216–19. Once this was revealed, the company had no reason to continue existing and simply disappeared. By contrast, most if not all of the other examples relied on in these articles continued to pursue their core business, in some cases quite successfully, including Uber, WeWork, Zenefits, Juul, and many others.

Although I do not believe Theranos makes the case for greater securities regulation of Unicorns, it is a more compelling case study for other purposes. *E.g.*, G.S. Hans, *How and Why Did It Go So Wrong? Theranos as a Legal Ethics Case Study,* 2 GA. ST. U. L. REV. 427 (2021).

[205] Wansley, *supra* note 11, at 1231.

[206] Indictment ¶ 8, United States v. Holmes, 18-cr-258 (N.D. Cal. filed June 14, 2018) [hereinafter Theranos Indictment]; Complaint ¶¶ 37–43, SEC v. Holmes, 18-cv-1602 (N.D. Cal. filed Mar. 14, 2018) [hereinafter Theranos SEC Complaint].

[207] Theranos Indictment ¶¶ 14–18.

[208] *Id.*

[209] *E.g.*, Letter from CMS to Sunil Dhawan, M.D., Director, Theranos Inc., *Re: Imposition of Sanctions* (July 7, 2016), http://online.wsj.com/public/resources/documents/r_Theranos_Inc_CMS_07-07-2016_Letter.pdf; Wansley, *supra* note 11, at 1216–19.

[210] Theranos Indictment, *supra* note 206, at ¶ 11–13; Theranos SEC Complaint, *supra* note 206, ¶¶ 44–89.

[211] Theranos SEC Complaint, *supra* note 206, ¶¶ 19–36.

[212] Wansley, *supra* note 11, at 1216–19 (citing CARREYROU, *supra* note 200, at 50).

questionable to assume they would have been more truthful in securities disclosures.[213]

It could be argued that the earlier involvement of outside auditors or other gatekeepers[214] would have sped up revelation of Theranos' fraud,[215] although none of the articles actually argues this.[216] In fact, several articles explicitly would *not* require that the proposed new financial disclosures be subject to audit.[217]

In any case, Theranos' investors relied on the reputations of a large number of super high-credibility external gatekeepers in making the decision to invest in Theranos. For instance, investors relied on the company's star-studded board of directors,[218] highly-touted partnerships with institutions like the Department of Defense and Walgreens,[219] experts at Johns Hopkins University who had purportedly vetted the technology,[220] and regulatory oversight by the FDA.[221] Theranos could have done to external auditors the same thing it did with all of these other gatekeepers—either deceive them or bring them in on the deception. Further, an audit of financials might not have made much of a difference to Theranos' investors, who were investing primarily in Theranos' technology and prospects of *future* growth, not its current balance sheet. Thus, investors evidently failed to demand to see

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[213] *See* Stephen M. Bainbridge, *Mandatory Disclosure: A Behavioral Analysis,* 68 U. Cin. L. Rev. 1023, 1034 (2000) ("[A] mandatory disclosure system laying out detailed required disclosures will not prevent issuers from fraudulently violating their commitments.").

[214] *See* John C. Coffee Jr., Gatekeepers: The Role of the Professions and Corporate Governance 2 (2006) (defining "gatekeeper" as "an agent who acts as a reputational intermediary to assure investors as to the quality of the 'signal' sent by the corporate issuer" by "lending or 'pledging' its reputational capital to the corporation, thus enabling investors or the market to rely on the corporation's own disclosures or assurances where they otherwise might not").

[215] *Cf.* Francine McKenna, *The Last Days of Theranos—the Financials Were as Overhyped as the Blood Tests,* MarketWatch (Oct. 20, 2018, 2:21 PM), https://www.marketwatch.com/story/the-last-days-of-theranos-the-financials-were-as-overhyped-as-the-blood-tests-2018-10-16.

[216] *E.g.*, Pollman, *supra* note 11, at 385 (suggesting indirectly that involvement of outside auditors can mitigate Unicorn fraud by detecting problems "before they evolve into the stage of intentional deception"; but, at Theranos, the intentional deception seems to have been baked in close to inception).

[217] Lipton, *supra* note 11, at n.411.

[218] *E.g.*, Deposition of Thomas Brodie, *Colman v. Theranos*, 16-cv-6822 Dkt. No. 187-9 at 88:3-17 (N.D. Cal. Mar. 2, 2018) (Theranos investor testifying about why he decided to invest: "The board of directors of this company are some of the most prominent people in America, and they were being paid not just to have their name on a board, but they were being paid to act as a board, and a board of a company to me, they are essentially my representatives once I bought in. I believe that Mr. Shultz, Mr. Perry, General Mattis, the guy from Wells Fargo . . . Senator Nunn, these people are on the board. I believed them through my country. I believed them to run a company.").

[219] *See* Discovery Master's Final Report, *Partner Investments LP v. Theranos, Inc.,* No. 12816-VCL (Del. Ch. Jan. 11, 2017) (emphasizing the importance of Theranos' relationship with Walgreens to plaintiffs' decision to invest); *United States v. Holmes*, No. 18-cr-00258, 2020 WL 666563, at *2 (N.D. Cal. Feb. 11, 2020) (similar).

[220] Complaint ¶ 29, *Walgreen Co. v. Theranos, Inc.,* 16-cv-01040 (D. Del. Nov. 8, 2016).

[221] *Id.* ¶ 27.

Theranos' tax returns—which apparently contained accurate financial information throughout this period.[222]

2. More Tradability

Wansley argues that more efficient tradability of Unicorn shares would have brought Theranos' fraud to light faster.[223] He suggests that a short-seller (working with information provided by financial journalists and analysts) might plausibly have placed a large bet against Theranos and worked to dig up additional information, leading to the earlier revelation about the truth of the company.

But these market players *already* had the ability and incentive to make these plays against Theranos through various market "substitutes"[224]—and just failed to do so.

First, negative information about Theranos would have been potentially useful for investors in Theranos' publicly traded business partners. Walgreens promoted its partnership with Theranos on multiple earnings calls,[225] at multiple investor conferences,[226] and in multiple securities disclosures.[227]

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[222] Christopher Weaver, *Theranos Secretly Bought Outside Lab Gear and Ran Fake Tests, Court Filings Allege*, WALL ST. J. (Apr. 21, 2017, 10:42 PM), https://www.wsj.com/articles/theranos-secretly-bought-outside-lab-gear-ran-fake-tests-court-filings-1492794470.

[223] Wansley, *supra* note 11, at 1224, 1231.

[224] *See generally* Ian Ayres & Joe Bankman, *Substitutes for Insider Trading*, 54 STAN. L. REV. 235, 242 (2001) (providing general account of how information about one firm can yield valuable trading strategies in other firms, including "rivals, suppliers, customers, or the manufacturers of complementary products"). Empirical research confirms that short-sellers incorporate "substitutes" into their trading strategies, leveraging negative information about one firm into various other trades. *E.g.*, Rui Dai et al., *Short Seller Attention,* 72 J. CORP. FIN. 102149 (2022) (finding "short sellers are attentive to news of customers to short their suppliers' stocks"). There are also cases where short-sellers target a parent company based on negative information about a subsidiary. *E.g.* Hindenburg Research, *DraftKings: A $21 Billion SPAC Betting It can Hide Its Black Market Operation* (June 15, 2021), https://hindenburgresearch.com/draftkings/ (short-seller report targeting DraftKings for alleged "black market operations" by 25% subsidiary SBTech).

[225] Wade D. Miquelon, Exec. Vice President, Chief Fin. Officer & President, Int'l, Walgreens Co., Q4 2013 Earnings Call (Oct. 1, 2013) (flagging the Theranos partnership as an important new "innovation" that "will help lower cost for our customers and improve their health outcomes supporting our purpose to help people get, stay and live well"); Wade D. Miquelon, Exec. Vice President, Chief Fin. Officer & President, Int'l, Walgreens Co., Q1 2014 Earnings Call (Dec. 20, 2013) ("We are very, very positive on Theranos. It's really a one of the disruptive plays. It's a better patient experience with a prick of blood. It's the highest standards of quality in lab with half of Medicare and the patient feedback we are getting is very good, but it's really a better, faster cheaper, more conveniently play. . . . [T]hat's the direction we are going, we got the assets, we have the healthcare professionals, we have the convenience and we have the right to win in these spaces and we are very excited about it.").

[226] Wade Miquelon, Executive Vice President, Chief Financial Officer, and President, Walgreen Co., Presentation at Morgan Stanley Global Consumer & Retail Conference (Nov. 27, 2013) ("Another innovation I talked about, and if I had another hour, I could easily talk about it for another hour is, Theranos. Theranos is really a one of the most I think transformative companies I have had the privilege of working with. . . . [A] single finger prick, which alone is amazing, but not only that as the test are more accurate, in general, and can be done in four hours. So it really is an example where we can now do lab testing across the full spectrum

Analysts from JP Morgan and elsewhere flagged the Theranos partnership as a key reason to be bullish on Walgreens.[228] And, once Theranos' fraud became public, Walgreens faced investor blowback.[229]

Similarly, although Safeway never mentioned Theranos by name, it repeatedly told investors about an exciting and material new "wellness play" that was in the works. In early 2012, the company's CEO responded to questions from an analyst about the company's recent poor performance by discussing a "significant . . . wellness play."[230] Subsequently, the CEO told investors that the "wellness play" would "have a material impact" on the company's financial results,[231] that it involved an unnamed partner possessing an "innovative" technology, that it would deliver "good margin and

of test. We can do it more conveniently, we can do it cheaper, we can do it faster, we can do it better. And when you get those kind of disruptions, I'd tell you it has to give anybody goosebumps. . . . I was out in Phoenix last week, where we opened our first two stores in Phoenix, that will be growing. We had a host of officials there, in fact the Mayor got his blood tested, right after I had mine tested, the physician came in and wrote himself six lab orders, so he could understand the process for his patience. But this is going to be very, very exciting. And I think if you really think about the place that lab has within the healthcare ecosystem with 70% of diagnosis coming from a lab test and what we can do to disrupt the model, it really opens a world of opportunities in a variety of different areas."); Walgreen Co., Presentation at JP Morgan HealthCare Conference (Jan. 15, 2014) ("This year, we took another step into the expansion of our services with our groundbreaking partnership with Theranos to introduce new innovative lab technology into our stores, provides patients with less invasive fast affordable tests on samples as small as a few drops of blood. . . . Together with Theranos, we aim to help improve patients' lives and laboratory services, which in the U.S. alone is an estimated $60 billion market and lab services, as you know, are a critical component in up to 70% of all clinical decisions.").

[227] Walgreen Co., Annual Report (Form 10-K/A (Amendment No. 2)) Aug. 31, 2014 at 17 (discussing Theranos partnership as a "key highlight" and stating that the company "provides less invasive and more affordable access to diagnostic lab testing"); Walgreens Boots Alliance, Inc., Proxy Statement (Form DEF 14A) (Apr. 17, 2015), at 30 (same).

[228] *E.g.*, Research Report, *We Remain Positive on Longer Term Opportunity as 2016 Goals Remain Intact*, JP Morgan (Dec. 20, 2014) (quoted in Compl. ¶ 46, Washtenaw Cnty. Emps. Rtrmt. Sys. v. Walgreen Co., 15-cv-3187 (Apr. 10, 2015)) (listing Theranos partnership as one of several reasons to be "positive" about Walgreens); Andrew P. Wolf & Jeremy Henrard, *Food and Drug Merchandising Industry Report*, BB&T Capital Markets (Dec. 2, 2013) (emphasizing that Theranos partnership would make Walgreens "well positioned to compete with the leading blood labs, LabCorp and Quest"); Marketline, Company Profile, Walgreens Boots Alliance Inc. at 20; Press Release, Investors' Reports, PR Newswire, Partnerships, Fund Raising, New Store Openings, and Strong Sales Drive Growth—Research Report on Walgreens, Safeway, L Brands, Nordstrom, and Five Below (Sep. 12, 2013); *Q1 Earnings In Line at Walgreens* Zacks Equity Research (Dec. 23, 2013); Erika Janowicz, *Summary of Walgreen Company's 1Q14 Earnings Call*, Benzinga (Dec. 20, 2013, 4:44 PM), https://www.benzinga.com/news/earnings/13/12/4174137/summary-of-walgreen-companys-1q14-earnings-call; Zacks Equity Research, WAG to Offer Theranos Lab Services (Sep. 10, 2013).

[229] *E.g.,* Press Release, *Faruqi & Faruqi, LLP is Investigating Walgreens Boots Alliance, Inc.* (Jun. 27, 2016), 2016 WLNR 19115317 (discussing investigation focusing on "whether the Company's Board of Directors and/or its officers committed mismanagement and breached their fiduciary duties in connection with the Company's partnership with and investment in Theranos Inc"); Compl., *Hays v. Almeida*, C.A. No. 2018-0728 (Del. Ch. Oct. 9, 2018) (derivative suit against Walgreens based on Theranos partnership). The derivative case was ultimately dismissed. *See Hays on behalf of Walgreens Boots All., Inc. v. Almeida*, 227 A.3d 1097 (Del. 2020) (affirming dismissal).

[230] Carreyrou, *supra* note 200, *at* 109.

[231] *Id.* at 117.

good income," and that it "should attract more people to our stores."[232] When the CEO resigned, he tripled down in his farewell press release, announcing that the company would soon "be rolling out a wellness initiative that has the potential to transform the Company."[233]

Given the apparent materiality of the Theranos partnership to both companies, a short-seller who knew that Theranos was a complete fraud could have put that information to good use.

Second, negative information about Theranos would also have been useful for investors in Theranos' two public company competitors—LabCorp and Quest Diagnostics.[234] Although investors could not short Theranos stock directly, they could have effectively bet against Theranos by investing in these incumbents.[235] The two companies faced a steady stream of questions from investors on earnings calls and at investor conferences about the threat posed by Theranos.[236] Financial journalists invoked Theranos to explain weak performance in the company's stocks in 2014 and 2015.[237] Intriguingly,

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[232] Robert Vosburgh, *Whole Health: The Smart Way with Safeway*, SUPERMARKET NEWS (Sept. 17, 2012), https://www.supermarketnews.com/health-amp-wellness/sn-whole-health-smart-way-safeway.

[233] CARREYROU, *supra* note 200, at 118.

[234] It was well understood that Theranos was mounting a challenge to LabCorp and Quest. *E.g.*, Ron Leuty, *Theranos: The Biggest Biotech You've Never Heard of*, S.F. BUS. TIMES (Aug. 30, 2013), https://www.bizjournals.com/sanfrancisco/print-edition/2013/08/30/theranos-the-biggest-biotech-youve.html; Marco R. della Cava, *Change Agents: Elizabeth Holmes Wants Your Blood*, USA TODAY (Jul. 8, 2014, 1:39 PM), https://www.usatoday.com/story/tech/2014/07/08/change-agents-theranos/12364023/; Michelle Quinn, *Meet Elizabeth Holmes, Silicon Valley's Latest Phenom*, EAST BAY TIMES (Jul. 14, 2014, 5:25 PM), https://www.eastbaytimes.com/2014/07/14/quinn-meet-elizabeth-holmes-silicon-valleys-latest-phenom/; Ken Auletta, *Blood, Simpler*, NEW YORKER (Dec. 15, 2014), https://www.newyorker.com/magazine/2014/12/15/blood-simpler; Bruce Friedman, *Quest Diagnostics and Lab Corp Business Models Becoming Obsolete*, LAB SOFT NEWS (Dec. 18, 2014, 7:48 PM), https://labsoftnews.typepad.com/lab_soft_news/2014/12/quest-and-lab-corp-business-model-becoming-obsolete.html; *see also* CARREYROU, *supra* note 200, at 135–36, 252, 276.

[235] Richard Beales, *Medical Upstart May Help Investors Smell Blood*, REUTERS BREAKINGVIEWS (Jul. 17, 2014), https://www.pfie.com/story/1339796/medical-upstart-may-help-investors-smell-blood-kl3j26szzz (noting that while ordinary investors "can't easily buy into Theranos," these investors could make an "unusually direct bet on the disruptive potential of Theranos" by selling short the shares of Quest and LabCorp, who are "directly in danger if Holmes succeeds"); TheFlyOnTheWall.com, *LH: Recommendations* (Jul. 18, 2014, 3:28 PM) (attributing LabCorp's falling stock price, to "concerns over potential competition from Theranos").

[236] Bill Bonello, Analyst, Craig-Hallum, LabCorp Second Quarter 2014 Earnings Conference Call (Jul. 18, 2014) (After CEO referred to "interlopers" who may "try to disrupt our business model," an analyst pressed him to directly address Theranos and the "potentially disruptive force in the lab industry."); Quest Diagnostics Inc. Presentation at Morgan Stanley Healthcare Conference (Sept. 8, 2014) (Morgan Stanley analyst emphasized that he is getting "a lot of questions" about Theranos and Quest's CEO said: "So Are we."); A.J. Rice, Analyst, UBS Securities, Quest Diagnostics Third Quarter 2014 Earnings Conference Call (Oct 23, 2014) (UBS analysts asks what he describes as the "obligatory" question about Theranos.); Ricky Goldwasser, Analyst, Morgan Stanley, Quest Diagnostics Inc. Presentation at Morgan Stanley Healthcare Conference (Sept. 18, 2015) (Morgan Stanley moderator asks, "how do you think about Theranos as a threat?").

[237] Robert Cyran, *LabCorp Deal Tests Positive for Value Destruction*, REUTERS (Nov. 3, 2014, 1:16 PM), https://www.reuters.com/article/idUS108866820020141103.

Quest's CEO seemed to sew doubts about the viability of Theranos' technology in response to relentless questioning he faced about the competitive threat it posed—asking in 2014 whether its product was "commercially a reality"[238] and telling investors in 2015 that "if you went into a Theranos site, what you'll find—it's not just a simple specimen that's collected. For those tested or checking the requisition and more complicated, they also do venipuncture."[239] As the truth about Theranos emerged, the stocks of those two companies moved up.[240] CNBC commentator Jim Cramer described them as "winners" and was "willing to wager they are joining the bullish cohort because of the destruction of Theranos."[241] Other financial analysts and reporters agreed.[242] An investor who knew the truth about Theranos before the rest of the market could have made a profit by investing in LabCorp and Quest.

Third, a short-seller who knew the truth about Theranos might have wagered that the entire biotech sector would suffer once the truth was revealed. A prominent ETF that tracks the biotech sector lost more than 3% of its value following Walgreens' January 2016 announcement that it was suspending its relationship with Theranos.[243] An analyst explained the fall as a product of Theranos' failure, which had "scared investors" out of the biotech sector.[244]

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Public company investors had numerous avenues to turn negative information about Theranos into profitable investment moves, and financial analysts and journalists had strong incentives to seek out this information. They failed to do so. This raises doubts as to whether mandating or incentivizing Theranos to allow its stock to be more freely traded on secondary markets would have sped up disclosure of the company's harms.

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[238] Quest Diagnostics Inc., Presentation at Morgan Stanley Healthcare Conference (Sept. 8, 2014).

[239] Steve Rusckowski, President & CEO, Quest Diagnostics Inc., Presentation at Morgan Stanley Healthcare Conference (Sept. 6, 2015).

[240] Wansley, *supra* note 11, at 1250.

[241] Jim Cramer, *There Is So Much Buying Power in So Many New Areas*, TheStreet.com (Jun. 13, 2016, 7:20 AM), https://realmoney.thestreet.com/articles/06/13/2016/cramer-dont-fall-prey-big-bears-just-look-stocks.

[242] Lewis Krauskopf, *Lab Stocks Quest, LabCorp Shine as Testing Outlook Brightens*, Reuters (May 31, 2016, 7:00 AM), https://www.reuters.com/article/questdiagnostics-laboratory-corp-stocks-idUSL2N18K1T0; Jonathan Galaviz, *LabCorp and Quest Diagnostics Could Capitalize on Federal Investigation of Theranos*, TheStreet.com (Jun. 7, 2016), https://www.thestreet.com/story/13597758/1/federal-investigation-of-vc-backed-theranos-gives-labcorp-and-quest-diagnostics-room-to-run.html; Rob Cox, *Disruption Flops Will Spare Old-Line Targets*, Reuters (Jun. 2, 2016, 12:50 PM), https://www.reuters.com/article/idUS82065457420160602.

[243] Rob Curran, Health Care Down After Walgreens Statement on Theranos, DOW JONES INST. NEWS (Jan. 28, 2016).

[244] *Id.*

3. More Whistleblowers

Winship indirectly suggests that the additional whistleblower protections she recommends adding for private company employees might have helped bring the Theranos fraud to light more quickly.[245] I respectfully disagree with this suggestion.

Her first policy proposal—expanding whistleblower protections for private company employees—seems unlikely to have made any difference because Theranos employees (including the whistleblowers who actually came forward) were likely *already* legally eligible for the full protections of existing whistleblower laws. Although current law generally does not afford private company employees anti-retaliation protections for internal whistleblowing,[246] a 2014 Supreme Court decision extended this protection to "employees of private contractors" of a public firm where the whistleblowing is connected to a public company.[247] Here, Theranos' business partnerships with publicly traded companies (Walgreens and Safeway) could have entitled its employees this protection. Given the materiality of the partnership to investors in both companies, whistleblowers could have "reasonably believe[d]" their information was connected to securities fraud by those two companies and thus would have already been entitled to full-blown whistleblower protection.[248]

Further, given Theranos' apparent willingness to violate an enormous range of laws, incur litigation and enforcement risk, and intimidate, threaten, and harass its employees regularly, a legal prohibition on retaliating against internal whistleblowers is unlikely to have actually prevented the company from doing so. Employees would likely have recognized as much and, thus, would likely not have been meaningfully encouraged to internally report wrongdoing by the prospect that, if they were fired, they could hire a lawyer to file a lawsuit that might lead to some recovery of their lost wages—after a few years of litigation.

Winship's second suggestion—expanding the list of agencies to which a Whistleblower could report to and still receive anti-retaliation protection—also seems unlikely to have helped here. Theranos whistleblower Tyler Shultz *did* reach out to such an agency (the New York State Health Department) long before the story became broadly known.[249]

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[245] Winship, *supra* note 11, at 714, 718–722 (noting that the story of Theranos' whistleblower provides "a cautionary tale about delay, given the length of time and amount of damage caused before the information about Theranos and its medical device came out" and then proceeding to discuss some suggestions for expanding whistleblower protections of private company employees).

[246] 18 U.S.C. § 1514A(a)(1)–(2).

[247] Lawson v. FMR LLC, 571 U.S. 429, 433, 461 (2014).

[248] *Supra* note 246.

[249] Carreyrou, *supra* note 200, at 195. This regulator apparently forwarded the complaint along to CMS, where it was apparently "lost in the shuffle." *Id.* at 248.

Winship's third suggestion—expanding the SEC's enforcement footprint in private companies and making more whistleblower awards to private company employees in order to encourage more whistleblowers to come forward—similarly seems unlikely to have sped up the disclosure of Theranos' malfeasance.[250] Assuming that the whistleblower reached out to a qualified SEC whistleblower lawyer, that this attorney saw the case as worth her time and passed it along to the SEC, and that the agency selected this tip among the thousands it receives each year to investigate,[251] it's unlikely that this investigation would have resulted in a speedier revelation of the underlying misconduct. In 2020, the average amount of time spent to complete an investigation of a financial fraud-issuer disclosure matter was 34 months.[252] As one leading whistleblower law firm warns on its website:

> *How long does it take for the SEC to investigate alleged securities violations?*
>
> Longer than you might think. Typically, SEC investigations take two to four years to complete.[253]

On that very slow timeline, in order to beat the real-world disclosure of Theranos' malfeasance in Fall 2015, a tipper would have had to get her tip to the agency by Fall 2012—a date that comes before most of the serious securities-related misconduct even occurred.[254]

4. More SEC Enforcement

Pollman argues for more SEC enforcement against Unicorns but does not specifically claim that this would have helped mitigate Theranos' harms. The fact that Holmes (and others) were evidently either deliberately willing to risk incarceration or were oblivious to this risk makes it doubtful that the

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[250] As a preliminary matter, this proposal might be quite costly. Given the lack of interaction between the SEC and private companies, it might take a large number of enforcement actions and a large number of whistleblower awards to establish sufficient "presence" that would put employees on alert that they can and should bring securities fraud tips to the SEC. These actions and awards would be costly not only in real dollar terms, but also in terms of opportunity costs, as the agency would be reallocating scarce regulatory resources away from other priorities.

[251] In FY 2020, the SEC received 6,900 whistleblower tips plus nearly 24,000 other complaints, tips, and referrals from other sources while opening just 1,200 new inquiries and investigations and filing 405 standalone actions. U.S. SEC, Division of Enforcement, 2020 Annual Report 7, 19 [hereinafter 2020 Enforcement Report]; U.S. SEC, Whistleblower Program, 2020 Annual Report to Congress 2, 27.

[252] 2020 Enforcement Report, *supra* note 251, at 6.

[253] Labaton Sucharow, *Frequently Asked Questions*, SEC Whistleblower Attorneys, https://www.secwhistlebloweradvocate.com/sec-whistleblower-frequently-asked-questions/ (last visited June 30, 2021).

[254] The SEC's complaint against Theranos and the DOJ Indictment both allege securities fraud only starting in 2013. Theranos SEC Complaint ¶ 2; Theranos Indictment ¶¶ 11–13.

additional deterrent threat of an SEC sanction would have changed her course.

Further, as just discussed above, the SEC's glacial pace on these kinds of investigations—taking an average of three years to complete investigation of a disclosure matter—makes it especially unlikely to speed up revelation of the misconduct.[255] Wansley emphasizes this point, pointing to an empirical research finding that the SEC "rarely [is] the first to reveal misconduct."[256]

* * *

Searching for ways to prevent recurrence of the Theranos debacle is a worthy project; however, the proposed new Unicorn securities regulations do not seem to fit the bill.[257]

IV. Unicorniphilia

A key theory underlying these articles is that Unicorns provide asymmetric risks on society—socializing costs, while capturing all benefits for themselves.[258] The articles rely exclusively on case studies drawn only from

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[255] *Id.*

[256] Wansley, *Taming*, *supra* note 11, at 1225 (discussing Alexander Dyck et al., *Who Blows the Whistle on Corporate Fraud?*, 65 J. Fin. 2213, 2213 (2010)).

[257] It is easy to look back at the money, fame, and goodwill showered on the company and conclude that something is fundamentally wrong with our system. But Theranos' technology *could* have worked. Today, a batch of well-funded startup companies are working on similar technology. *E.g.,* Kitty Knowles, *Theranos Failed Hard, but Did It Also Prove the Market?*, Sifted (Aug. 30, 2019), https://sifted.eu/articles/theranos-blood-testing-startups/; Alex Keown, *6 Blood Testing Startups Hoping to Be The Next Theranos—The Good Version*, BioSpace (Jan. 12, 2018), https://www.biospace.com/article/unique-6-blood-testing-startups-hoping-to-be-the-next-theranos-the-good-version/; Erin Schumaker, *Post-Theranos, Startups Are Still Out for Blood*, Medium (Apr. 18, 2019), https://onezero.medium.com/post-theranos-startups-are-still-out-for-blood-5d5c43cf3376; Kristen V Brown & Ian King, *Blood-Test Startups Try to Crawl Out from the Shadow of Elizabeth Holmes*, Bloomberg (Mar. 25, 2019, 6:00 AM), https://www.bloomberg.com/news/articles/2019-03-23/elizabeth-holmes-theranos-still-haunt-blood-testing-startups?leadSource=UVerify%20wall; Emma Court, *How Blood-Testing Startups are Pitching Themselves After the Theranos Scandal*, MarketWatch (Jun. 29, 2018, 8:57 AM), https://www.marketwatch.com/story/how-blood-testing-startups-are-pitching-themselves-after-theranos-scandal-2018-06-22; Sanjana Varghese, *The Spectre of Theranos Looms Large over the Diagnostic World*, Wired (Feb. 13, 2019, 6:00 AM), https://www.wired.co.uk/article/blood-startups-theranos-diagnostics. Theranos' rapid ascent has a silver lining: it signals that firms pursuing unproven but potentially transformative technology are able to raise enormous amounts of capital to try to develop these technologies. By all means, we should do whatever we can to prevent the next Theranos. But, as the next Part argues, we have to be careful to not prevent the next Moderna.

[258] *See* Westbrook, *supra* note 11, at 517–18 (arguing that successful Unicorns provide "enormous gains for their founders, insiders, and early-stage investors," but failed Unicorns impose "substantial hardships on investors and a wide array of stakeholders including employees, customers, suppliers, lenders, the economy, and society itself").

"bad" Unicorns and generally do not consider "good" ones.[259] And they do not focus on the possibility that Unicorns provide social benefits precisely *because* of the current securities regulation regime that governs them, nor do they consider any potential costs of their proposals to alter that regime (such as the loss of the aforementioned benefits).[260]

I believe this is incorrect. Like all companies, when Unicorns succeed, they sometimes create important benefits for the broader society. And there are good reasons to think that Unicorn success is attributable, in some cases, to the current securities regulation regime that governs them. Altering that regime as the authors propose would therefore risk imposing significant social costs—harming exactly the same constituencies that these articles are attempting to protect.

Moderna is a case in point. For many years, the company looked to be a highly dysfunctional and overhyped Unicorn and then went on to provide an enormously valuable social benefit in the form of a rapidly developed and highly effective COVID-19 vaccine. The case study illustrates how the proposed new Unicorn securities regulations, if they had been in effect during Moderna's corporate adolescence, might have disrupted the company's development and prevented it from being in a position to develop that vaccine.

A. *The Benefits of Current Unicorn Regulation*

"Being a public company is hard."[261] In some cases, companies pass along these burdens to shareholders, other stakeholders, and society at large.

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[259] *But see* Fan, *supra* note 11, at 611, 612–637 (providing case studies of Airbnb, Dropbox, Pinterest, Snapchat, and Uber).

[260] A few authors seem to engage directly with the possibility that the social benefits provided by Unicorns are dependent on the current securities regulation regime. Pollman notes that "some observers might view the relative paucity of securities litigation in private companies as an advantage of staying private," that "innovative companies may need a long leash during the early part of their life cycle," and that "one might worry that increased securities litigation and enforcement would have an overdeterrent effect because valuation fluctuations and failures might be confused with misconduct in hindsight." Pollman, *supra* note 11, at 391–392. However, Pollman seems to conclude that this position is incorrect, since she calls directly for more SEC enforcement against private companies and notes that her analysis may also "bolster the rising voices pushing for reexamination of the public-private divide." *Id.* at 397. Similarly, Westbrook notes that "[i]t might be argued that more rigorous governance of unicorns could stifle innovation" but dismisses this argument as "highly speculative" and based on a "romanticized" vision of founders. Westbrook, *supra* note 11, at 563–64. I concede that my discussion of how the proposed new securities regulations would have impacted Moderna is necessarily speculative. But the same could be said for all discussions about the effects of proposed policy changes, including the ones in the articles I am examining here. Sometimes speculative discussions are the best we can do. I do not believe my discussion "romanticize[s]" Moderna, its founders, or its CEO—actually, if anything, I try to provide a critical account by focusing on the company's many failures, problems, and possibly misleading statements made to the public and investors.

[261] Usha Rodrigues, *The Once and Future Irrelevancy of Section 12(g)*, 2015 U. Ill. L. Rev. 1529, 1555 (2015).

For example, empirical studies show a significant negative correlation between going public and firm-level innovation.[262]

Before embracing proposals to make private company regulation more like public company regulation (by expanding disclosure, eliminating restrictions on tradability, increasing SEC scrutiny, and enhancing whistleblower protections), it's important to consider the benefits that the current regime provides. For each proposed reform, I highlight corresponding benefits that may be lost as a result.

1. Secrecy[263]

Secrecy can enable firms to build and maintain a competitive edge.[264] For a newer company pursuing an innovative and risky strategy, investors may be substantially less likely to invest if they know the company will be required to make disclosures that will reveal key plans and decisions to the world. Mandatory disclosure thus may chill certain socially valuable business activities.[265] As Geoffrey Manne argues, "forced disclosure deters the creation or collection of information that is valuable when kept secret, but that loses its value when disclosed."[266]

Secrecy can be particularly essential for companies to innovate and challenge the status quo.[267] Whether a company is challenging existing regulations, existing scientific knowledge or technological practice, existing consumption patterns, or existing dominant firms in a given product market,

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[262] Huasheng Gao et al., *Innovation Strategy of Private Firms*, 53 J. Fin. & Quant. Anal. 1, 19 (2018); Shai Bernstein, *Does Going Public Affect Innovation?*, 70 J. Fin. 1365 (2015); John Asker et al., *Corporate Investment and Stock Market Listing: A Puzzle?*, 28 Rev. Fin. Studs. 342 (2014); Simone Wies & Christine Moorman, *Going Public: How Stock Market Listing Changes Firm Innovation Behavior*, 52 J. Mktg. Res. 694 (2015); William R. Kerr & Ramana Nanda, *Financing Innovation*, 7 Ann. Rev. Fin. Econ. 445 (2015); *Cf.* Wansley, *Taming*, *supra* note 11, at 1254 n.446 (acknowledging that "[t]here is some evidence that going public inhibits innovation"); Pollman, *supra* note 11, at 392 (considering the view that "innovative companies may need a long leash during the early part of their life cycle").

[263] Geoffrey Manne, *The Hydraulic Theory of Disclosure Regulation and Other Costs of Disclosure*, 58 ALA. L. Rev. 473, 474 (2007) (noting much of the literature on mandatory disclosure "pays scant attention to the attendant costs").

[264] Pollman, *supra* note 11, at 392; Elizabeth Pollman, *Startup Governance,* 168 U. Pa. L. Rev. 155, 213–14 (2019); Michael Guttentag, *An Argument for Imposing Disclosure Requirements on Public Companies*, 32 Fla. St. U. L. Rev. 123, 140 (2004); *see also* Lipton, *supra* note 11, at 566 (claiming this as a "feature, not a bug" of the securities disclosure regime); Westbrook, *supra* note 11, at 563 (discussing and dismissing the argument).

[265] John Coffee, Hillary Sale & M. Todd Henderson, Securities Regulation: Cases and Materials 9 (13th ed. 2015) (noting that mandatory disclosure "could reduce the incentive to invest in research and development" by enabling competitors to mimic plans); Frank Easterbrook & Daniel Fischel, The Economic Structure of Corporate Law 310–11 (1991) (noting that "disclosure may lead firms to change or abandon profitable projects that they otherwise would have pursued" such as where "[a] new product might be profitable if built in secrecy, stealing a march on rivals; if the rules require advance disclosure, rivals' responses make the project less attractive").

[266] Manne, *supra* note 263, at 484.

[267] Fan, *supra* note 11, at 608.

maintaining secrecy may be critical in allowing the company to build up the necessary momentum to break through these barriers. Mandatory disclosure may effectively chill this kind of socially valuable activity.[268]

Further, periodic disclosure may lead to distortions in firm priorities towards short-term benefits away from investments that pay off over the long term.[269] It may also expand the risk of securities litigation.[270] Finally, disclosure is itself costly, requiring accountants and lawyers and making costly institutional changes.[271] The resources devoted to producing these disclosures and dealing with securities litigation could otherwise have been spent on other corporate projects.[272]

2. Investor Lock-In

Restrictions on the tradability of shares—i.e., investor "lock-in"[273]—also has important benefits.

a. Founder Incentives

Restrictions on tradability are a core part of the high-powered equity-based incentives that drive founders and other startup employees to devote

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[268] STEPHEN CHOI & A.C. PRITCHARD, SECURITIES REGULATION: CASES AND ANALYSIS 664 (5th Ed. 2019) (noting that the "rigorous protection afforded to investors in the public registration process" may lead some companies to entirely "eschew an otherwise profitable business venture" which results in investors losing the "opportunity to invest in such companies"); LANGEVOORT, *supra* note 138, at 165 ("[I]n an economy that values innovation and aggressiveness—creative disruption—transparency doesn't work well.").

[269] *Supra* Part II.A (discussing "quarterly capitalism").

[270] *Lipton*, *supra* note 11, at 567–68.

[271] Guttentag, *supra* note 264, at 139–40; Merritt Fox, *Optimal Regulatory Areas for Securities Disclosure*, 81 WASH. U. L. REV. 1017, 1023 (2003).

[272] A final point on the costs of disclosure. Lipton partially grounds her general proposal for expanded disclosures on the benefits flowing from "social control over business activity" and the concept of "publicness." Lipton, *supra* note 11, at 510. The idea is that mandatory disclosure subjects issuers to scrutiny by outside forces, including "journalists, and the general public," exposing them to the risk of "social opprobrium," and that corporations make decisions designed to avoid this result. *Id.* As a preliminary matter, it is hard to imagine *more* publicness than what Uber and Theranos faced. *E.g.*, Hilary A. Sale, *The Corporate Purpose of Social License*, 94 S. CAL. L. REV. 785, 805–17, 837–39 (2021) (examining how Uber faced intense consequences of "publicness" notwithstanding its "private" regulatory status). Assuming that more disclosure would lead to yet more publicness, there are reasons to be wary of endorsing the policy on this ground. First, the mechanisms of "publicness" do not always fairly reflect the interests of all corporate stakeholders but rather may reflect some fraction of those interests as filtered through social media and other institutions, which creates a significant divergence between "publicness" and the interests of affected stakeholders. Second, "publicness" seems to have a spotty track record—picking targets without any factual basis, based on merely surface-level behaviors without regard to meaningful conduct, based on some widely held prejudice or bias, or because of some other hidden agenda. Third, the threat of a "publicness" attack may lead firms to overinvest in precautionary measures or even abandon or avoid certain socially productive lines of business.

[273] Darian Ibrahim, *The New Exit in Venture Capital*, 65 VAND. L. REV. 1, 7 (2012) ("[I]n capital lock-in, investors cannot look to the *entity* for liquidity; in investor lockin, they cannot look *anywhere* for liquidity.").

extensive efforts to achieving success. Restricted tradability ensures that these individuals are tying their own financial wellbeing to the fate of the company and have high-powered incentives to work as hard as possible to ensure the company grows and achieves successful "exit"—because that is the only way they will be able to realize the gains from their labor. By contrast, as Darian Ibrahim has written, a founder or employee who sells off her stock mid-stream "would no longer share in any further equity upside of a traditional exit and therefore would be less motivated to put in the long hours necessary to achieve it."[274] Further, even if a founder or employee sold only part of their shares mid-stream, that sale might fundamentally reduce their incentives to the extent it provides a dramatic increase in their personal wealth.[275]

Investor lock-in also enables founders to invest massive amounts of time and efforts by allowing them to identify and, in some cases, select the outside investors with whom they will be sharing power as the company grows. VCs typically receive a variety of financial and control rights in exchange for their investments, and, over a company's life cycle, they may be in a position to exert significant discretion over a host of key corporate decisions—such as the timing and terms of an "exit," replacing the founder/CEO, how much to invest in a given line of business, and the timing and terms of new investments.[276] Founders recognize that when they take on outside investors, they are ceding some control,[277] and therefore often take great care at the outset in selecting investors—looking to their reputations and track records, how the company fits into their portfolios, and interviewing particular individual board members.[278] Tradability defeats founders' ability to predict who will be holding the levers of power when times get

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[274] *Id.* at 30–31; Matthew Wansley, *Beach Money Exits*, 45 J. Corp. L. 151, 182 (2019) ("VCs worry that when founders sell large portions of their equity stakes, they erode their forward-going incentives.").

[275] *Cf.* Wansley, *supra* note 274, at 181 ("The more financial security that founders receive, the more it erodes their strong equity-based incentives to run the business."); *see also* Langevoort, *supra* note 138, at 111 ("[T]he most highly skilled innovators benefit more by inventing when they have a relatively large stake in a yet-private company than when they've been diluted and are sharing ownership with a vast number of public shareholders.").

[276] *E.g.*, Brian Broughman & Jesse Fried, *Carrots and Sticks: How VCs Induce Entrepreneurial Teams to Sell Startups*, 98 Cornell L. Rev. 1319, 1326–31 (2013).

[277] Elizabeth Pollman, *Startup Governance*, *supra* note 264, at 187 (noting that divergent "strategic vision[s] for business operations" between founders and VC investors can cause conflict); Wansley, *supra* note 274, at 164 (noting that conflicts may arise based on divergent "predictions about the startup's technological development, customers, revenue, costs, and market share, the set of potential acquirers and market consolidation or fragmentation, potential new entrants, regulatory and other execution risk, and macroeconomic conditions"); Jesse Fried & Mira Ganor, *Agency Costs of Venture Capitalist Control in Startups*, 81 N.Y.U. L. Rev. 967, 994 (2006) (noting that VCs may "have a bias towards exit").

[278] Pollman, *supra* note 138, at 619, 635–39; Pollman, *supra* note 264, at 204; *see also* Robert Bartlett, *Venture Capital, Agency Costs, and the False Dichotomy of the Corporation*, 54 UCLA L. Rev. 37, 56 n.78 (2006) (discussing the role of reputation in VC investing); Fried & Ganor, *supra* note 277, at 1005–08 (same); Wansley, *supra* note 274, at 174 (same); Wansley, *supra* note 11, at 1207 (same).

tough—much less how those levers will be pulled, and thus may make it less attractive for a founder to want to start a company in the first place.

b. VC Incentives

Investor lock-in also is a core-enabling feature of VC investments in startups.[279] Restricted tradability helps VC investors overcome the informational asymmetry problem that any startup investor faces. As Jesse Fried and Mira Ganor explain, since founders know *much* more about the real value of the business than outside investors, a VC "may worry that the entrepreneur knows the firm is worth very little and hopes to sell them overpriced equity." The solution, they explain, is the liquidation preference that VCs routinely receive in their preferred stock agreement which ensures that "the entrepreneur will not profit unless the value of the company turns out to be greater" than the value of the liquidation preference.[280] Free tradability would eliminate this VC protection, enabling the founder to sell their common shares at an inflated value immediately following VC investment before the truth becomes apparent—leaving VCs holding the bag.

Restricted tradability is also a key prerequisite for the consistently increasing valuations that VCs seek in startup investments. As Pollman explains, investors and founders alike "need the company's valuation to keep going up in order to raise another round of financing and not get significantly diluted and eventually reach an exit that generates returns."[281] Free tradability would take the power to set valuation away from VCs making the valuations less predictable and more volatile.[282]

Further, restricted trading also creates a strong incentive for VCs to devote time and effort to providing guidance and advice to the companies they are already invested in. By making VC "exit" easier, free tradability would tend to undermine VC incentives to invest in "voice,"[283] depriving firms (and their founders) of valuable advice and guidance these repeat-players provide.[284]

Finally, restricted trading also enables an important signal that VCs rely on when deciding whether to invest in a given firm: the identity and characteristics of other VCs invested in the firm. Robert Bartlett explains that for a new VC investor considering making an investment in a new firm, the fact that an existing investor in the firm will also be making another investment

[279] All of the above-referenced beneficial effects of restricted tradability on entrepreneurial incentives help make startups more attractive investments for VCs.

[280] Fried & Ganor, *supra* note 277, at 983.

[281] Pollman, *Startup Governance*, *supra* note 264, at 202; *see also* Bartlett, *supra* note 278, at 67; Langevoort & Sale, *supra* note 11, at 1365.

[282] Elizabeth Pollman, *Information Issues on Wall Street 2.0*, 161 U. Penn. L. Rev. 179, 214 n.200 (2012).

[283] Ibrahim, *New Exit*, *supra* note 273, at 30.

[284] Pollman, *Startup Governance*, *supra* note 264, at 180 (noting that VCs' incentive to provide strategic guidance to firms they invest in derives from their "long-term relationship" with entrepreneurs).

in this round sends a strong "signal of the company's perceived quality."[285] Further, VCs will often have diverging interests with one another regarding various key corporate decisions (e.g., when/whether to "exit," replace a CEO, invest in a line of business, etc.),[286] and so, before they invest, they rationally also take into consideration the identities, reputations, and preferences of their co-investors with whom they will be sharing power.[287] Tradability would obscure each of these signals, and thereby potentially make investing more risky.

c. Stock-Market Short-Termism

Investor lock-in insulates startup firms from the effects of "stock-market short-termism." Enabling free tradability might cause startup firm manager compensation to be tied increasingly to stock price performance; new activist investors to arise who buy up concentrated positions in startup stocks and then leverage their control to press for changes; and startup firm culture to change, as executives and employees come to focus increasingly on projects and values measured by stock price performance.[288]

The (contested) literature on stock-market short-termism suggests that these forces might lead startup firms to increasingly harm long-term shareholders and other stakeholders by, e.g., decreasing investments in programs that pay off in the long term (e.g., R&D, product safety, and compliance) and taking risky or harmful actions because of the prospect of a short-term payoff (e.g., taking on excessive leverage, engaging in accounting fraud, laying off and exploiting workers). Some studies have found that features associated with free-tradability of shares drive decreases in firm innovation.[289]

d. Compliance

Finally, restricted tradability also shields firms from an array of legal and compliance risks. For instance, active secondary market trading brings an increased risk of securities litigation,[290] and creates the temptation for insider trading.

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[285] Bartlett, *supra* note 278, at 56.

[286] *See* Bartlett, *supra* note 278, at 60; Pollman, *Startup Governance*, *supra* note 264, at 200.

[287] Bartlett, *supra* note 278, at 97.

[288] *Cf.* Pollman, *Startup Governance, supra* note 264, at 213 (noting that secondary market trading may be "time-consuming and distracting for managers and employees—whose time and attention are key resources for company performance and value").

[289] *E.g.*, Jie He & Xuan Tian, *The Dark Side of Analyst Coverage: The Case of Innovation*, 109 J. Fin. Econ. 856, 876 (2013) (finding that firm innovation declines as analyst coverage increases).

[290] Pollman, *supra* note 282, at 214 n.200; Wansley, *supra* note 11, at 1258 n.469.

3. Limited Whistleblower Protections

Whistleblowers are an important mechanism for uncovering corporate misconduct. But legal protections for whistleblowers can be costly. As Justice Sotomayor emphasized in a recent opinion, the anti-retaliation protections in SEC whistleblower laws create "costly litigation burdens" for corporate employers.[291] To cover these costs, companies must allocate resources away from other, possibly more productive uses.[292] Amy Westbrook has pointed out in other work that increased incentives for external whistleblowing may draw these whistleblowers away from reporting internally, where their efforts might do the most good (for the company, victims, and investors) in quickly shutting down the misconduct.[293] Elizabeth Pollman points out that whistleblower laws can also "be gamed or manipulated by employees."[294] They can undermine corporate confidentiality in a manner that weakens a company's competitive position.[295] And they can seriously impair the relationship between a company and its in-house counsel in a manner that undermines effective compliance.[296]

4. Being off the SEC's Radar

Limited risk of SEC enforcement has benefits. Without committing any violations, companies that face a realistic threat of SEC investigation and enforcement have to spend substantial resources on a variety of measures designed to help them avoid such scrutiny. For instance, they may devote resources on expensive and intrusive regulatory compliance programs,[297] and on various forms of lobbying to win favor from key agency personnel or

[291] Lawson v. FMR LLC, 571 U.S. 429, 472 (2014) (Sotomayor, J.).

[292] *E.g.*, Brief for Amicus Curiae the Chamber of Commerce of the United States of America in Support of Respondents at 12, *Lawson v. FMR LLC*, No. 12-3 (U.S. filed Oct. 7, 2013); Brief for Amicus Curiae of the Chamber of Commerce of the United States of America as Amicus Curiae in Support of Petitioner, *Digital Realty Trust v. Somers*, No. 16-1276 (U.S. filed Aug. 31, 2017); Brief for Amicus Curiae of the Center for Workplace Compliance in Support of Petitioner at 27, *Digital Realty Trust v. Somers*, No. 16-1276 (U.S. filed Aug. 31, 2017).

[293] Amy Deen Westbrook, *Cash for Your Conscience: Do Whistleblower Incentives Improve Enforcement of the Foreign Corrupt Practices Act*, 75 Wash. & Lee L. Rev. 1097, 1164 (2018); *see also* Letter from Tom Quaadman (Center for Capital Markets Competitiveness) to Brent Fields (SEC), *Re: Amendments to the Commission's Whistleblower Program Rules* (Sept. 18, 2018) [hereinafter Quaadman Letter].

[294] Pollman, *supra* note 11, at 399; *see also* Quaadman Letter, *supra* note <*CITE* _Ref120571825 "> ("The bounty program . . . suffers from a significant structural flaw in that it permits a wrongdoer—one who actually planned, aided, abetted or caused a violation of law—to be eligible to receive a bounty.").

[295] Richard Moberly, *Confidentiality and Whistleblowing*, 96 N.C. L. Rev. 751, 752 (2018).

[296] Gerardo Adrian Galvan & Kelly Crawford, *The Dilemma of In-House Counsel as Whistleblower: When and Where to Blow the Whistle?*, 46 Sec. Reg. L.J. 1, 11–12 (2018).

[297] Veronica Root, *The Compliance Process,* 94 Ind. L.J. 203, 205 (2019); Sean Griffith, *Corporate Governance in an Era of Compliance*, 57 Wm. & Mary L. Rev. 2075, 2077, 2104 (2016).

overseers.[298] All of these resources come from elsewhere within the firm where they might have been used to pursue more socially beneficial projects.[299]

SEC enforcement also may have a chilling effect, causing firms to limit or avoid certain lines of business altogether where they believe the enforcement costs/risks outweigh the positive returns.[300]

Further, companies may be targeted by SEC enforcement actions or investigations without committing any wrongdoing. About half of all publicly disclosed SEC investigations of public companies do not progress to enforcement actions.[301] There are prominent examples where the agency has pursued an enforcement action but ultimately failed to establish liability.[302] There are also many cases where the agency has extracted settlements from targets under legal theories that have never been actually embraced by any court.[303] These companies targeted by SEC enforcement have to retain lawyers and expert witnesses and, ultimately, may pay large fines to settle the cases—costs that may be ultimately borne by the company's investors and perhaps other stakeholders.[304] Further, executives and other key personnel may be distracted from their core business activities as they prepare for depositions, respond to subpoenas, and strategize about dealing with the fallout from the investigation or enforcement action.

Pollman is optimistic that SEC enforcement against private companies can be appropriately "calibrated over time and with further study."[305] But there are reasons to worry. SEC's enforcement choices are subject to a host of systematic distortions—from politics,[306] to the career incentives and ideol-

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[298] Urska Velikonja, *Politics in Securities Enforcement*, 50 Ga. L. Rev. 17, 27, 38 (2015); Mihir N. Mehta & Wanli Zhao, *Politician Careers and SEC Enforcement Against Financial Misconduct*, 69 J. Acct. & Econ. 1, 18 (2020).

[299] *E.g.*, Veronica Root Martinez, *The Outsized Influence of the FCPA?*, 2019 U. Ill. L. Rev. 1205, 1224–25 (arguing that overemphasis of FCPA compliance has forced firms to under-invest in other areas).

[300] Yuliya Guseva, *The SEC, Digital Assets, and Game Theory*, 46 J. Corp. L. 629, 674–75 (2021).

[301] Stephen J. Choi & A. C. Pritchard, *SEC Investigations and Securities Class Actions: An Empirical Comparison*, 13 J. Empirical Legal Stud. 27, 33 (2016).

[302] *See* Alexander I. Platt, *SEC Administrative Proceedings: Backlash and Reform*, 71 Bus. Law. 1, 9 (2015).

[303] *Id.* at 25–31.

[304] David Rosenfeld, *Civil Penalties Against Public Companies in SEC Enforcement Actions: An Empirical Analysis*, 22 U. Pa. J. Bus. L. 135, 201–02 (2019).

[305] Pollman, *supra* note 11, at 360.

[306] Velikonja, *Politics*, *supra* note 298; Jonathan R. Macey, *The Distorting Incentives Facing the U.S. Securities and Exchange Commission*, 33 Harv. J.L. & Pub. Pol'y 639, 647–48 (2010). For recent illustrations of the political impact on SEC enforcement, see Tom Dreisbach, *Under Trump, SEC Enforcement of Insider Trading Dropped to Lowest Point in Decades*, NPR (Aug. 14, 2020, 4:12 PM), https://www.npr.org/2020/08/14/901862355/under-trump-sec-enforcement-of-insider-trading-dropped-to-lowest-point-in-decade; Press Release, SEC, *SEC Announces Enforcement Task Force Focused on Climate and ESG Issues* (Mar. 4, 2021); SEC Comm'rs Hester Peirce & Elad Roisman, *Statement on SEC's Enhanced Climate Change Efforts* (Mar. 5, 2021).

ogies of key staff,[307] to turf wars with other enforcement agencies,[308] to psychological and behavioral biases.[309] These distortions may lead the agency to pursue actions even where doing so will likely lead to more harm than good.

Finally, any increase in enforcement against private companies would necessarily come either from a larger appropriation from Congress, in which case it imposes costs on the taxpayer, or from a reallocation of resources within the agency, in which case it imposes costs in the form of decreased compliance/regulatory activity in whatever area the agency is choosing to deemphasize.[310]

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The current approach to securities regulation of Unicorns provides key benefits, not only to the companies and their investors, but to a broader array of stakeholders. Changing this regime risks reducing these benefits. The next Section makes this point more concrete through a detailed case study.

B. Moderna: A Good "Bad" Unicorn

Most of the articles rely exclusively on anecdotes about "bad" Unicorns. By contrast, I have chosen one that I think readers will agree provided a massive social benefit: Moderna. My goal is not merely to show that some Unicorns add value, but to show how this value sometimes derives from the current state of the securities laws governing private companies. Had the proposed new Unicorn securities regulations been in place during its corporate adolescence, Moderna might not have been in a position to develop a highly effective COVID-19 vaccine in record time as it did in 2020.

1. Moderna's Story

a. Birth

Most lawyers have heard of "DNA"—the molecule that stores the genetic instructions that our bodies' cells need to make proteins. But instruc-

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[307] Alexander I. Platt, *The Non-Revolving Door*, 46 J. CORP. L. 751 (2021) (reviewing literature on SEC revolving door enforcement).

[308] Jonathan R. Macey, *Administrative Agency Obsolescence and Interest Group Formation: A Case Study of the SEC at Sixty*, 15 CARDOZO L. REV. 909, 914 (1993).

[309] Stephen J. Choi & A. C. Pritchard, *Behavioral Economics and the SEC*, 56 STAN. L. REV. 1, 20–21 (2003).

[310] These costs are not trivial. To achieve a rough parity between the proportion of public companies and Unicorns who face enforcement, the agency would have to file about thirteen actions against Unicorns every year. *See* Anat Carmy-Wiechman et al, *SEED Findings on the SEC Enforcement Actions Against Public Companies and Their Subsidiaries in Fiscal Year 2020*, NYU COMPLIANCE & ENFORCEMENT (2020), https://wp.nyu.edu/compliance_enforcement/2020/11/24/seed-findings-on-the-sec-enforcement-actions-against-public-companies-and-their-subsidiaries-in-fiscal-year-2020.

tions are worthless without something to read them. mRNA performs that function. It is the "messenger" that carries information from the DNA to the cell's protein-making machinery.

For years, scientists looked to mRNA as an alluring alternative to traditional pharmaceutical strategy of manufacturing proteins directly and injecting them into our bodies.[311] Scientists believed that synthesizing mRNA, delivering it to the right cells, and getting our bodies to manufacture the proteins ourselves could be a winning strategy.[312] But researchers struggled to find a workable "delivery" mechanism.[313] Bodies consistently rejected the synthesized mRNA as an alien intruder.

Around 2009, Harvard Medical School researcher Derrick Rossi studied some of the early mRNA research[314] and set out to press further in his own lab.[315] Rossi was soon successful in developing a promising delivery mechanism and started planning to launch a commercial enterprise. In 2010, he founded "Moderna Therapeutics" with MIT researcher/entrepreneur Robert Langer, Harvard Medical School researcher Kenneth Chien, and venture capitalist Noufar Afeyan.[316] The four co-founders recognized they needed to bring in someone else to serve as CEO. Afeyan persuaded Stephane Bancel to leave his high-paying and prestigious job as CEO of a major French diagnostics company to join the brand-new Moderna as its CEO in 2011.[317]

b. Adolescence

Under Bancel's leadership, the company raised almost $2 billion between 2011 and its 2018 IPO (not inclusive). The company's valuation grew exponentially—from $10 million in 2011, to $100 million in 2012, to $3 billion in 2014, to $7.5 billion on the eve of the IPO.

Bancel and his colleagues relentlessly promoted the company's "revolutionary" potential. In 2012, Bancel claimed that Moderna's technology

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[311] Kelly Servick, *This Mysterious $2 Billion Biotech Is Revealing the Secrets Behind Its New Drugs and Vaccines*, SCIENCE (Mar. 25, 2020), https://www.science.org/content/article/mysterious-2-billion-biotech-revealing-secrets-behind-its-new-drugs-and-vaccines.

[312] *Id.*

[313] Damian Garde & Jonathan Saltzman, *The Story of Two Firms, Pfizer and Moderna, Leading the Race for Approval of a Covid-19 Vaccine*, BOS. GLOBE (Nov. 10, 2020), https://www.bostonglobe.com/2020/11/10/metro/inside-quest-covid-19-cure/.

[314] A key step forward was made by Katalin Kariko, who would go on to join another Unicorn, BioNTech, which partnered with Pfizer to create another mRNA COVID-19 vaccine. Garde & Saltzman, *supra* note 313; Servick, *supra* note 311.

[315] Garde & Saltzman, *supra* note 313; Servick, *supra* note 311.

[316] Peter Loftus & Gregory Zuckerman, *Inside Moderna: The Covid Vaccine Front-Runner with No Track Record and an Unsparing CEO*, WALL ST. J. (Jul. 1, 2020, 10:53 AM), https://www.wsj.com/articles/inside-moderna-the-covid-vaccine-front-runner-with-no-track-record-and-an-unsparing-ceo-11593615205; Moderna Inc., Registration Statement (Form S-1) (Nov. 9, 2018) at 6, 9.

[317] Loftus & Zuckerman, *supra* note 316.

could "revolutionize the treatment of a wide variety of illnesses,"[318] and Afeyan suggested the company could be the most important biotechnology company in thirty years by "adding an entirely new drug category to the pharmaceutical arsenal in the fight against important diseases."[319] In 2013, Langer said, "It is very, very rare . . . that an idea this big comes along,"[320] and Bancel stated, "We feel this is most probably the only time in our lives that we will have a chance to really change the world."[321] In 2014, Bancel claimed that Moderna "can do hundreds, if not thousands, of drugs the biotechnology industry can't do, by injecting messenger RNA into cells."[322] The next year, he committed to bringing 100 new drugs to patients within the coming decade.[323] In 2016, he explained, "mRNA is like software: You can just turn the crank and get a lot of products going into development."[324] In 2017, Moderna's Chief Medical Officer stated, "We're actually hacking the software of life. And it's changing the way we think about prevention and treatment of disease."[325] And, in early 2018 the company projected earning $37 billion a year in revenue,[326] and bringing five new drugs into human trials each year for the next decade.[327]

The company leveraged its remarkable fundraising to pursue a broad portfolio of products. It worked with AstraZeneca on heart tissue regeneration,[328] with Merck on "personalized cancer vaccines,"[329] with Vertex on

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[318] Press Release, Moderna, *Moderna Announces $40 Million in Financing to Advance Development of New Biotherapeutic Modality: Messenger RNA Therapeutics* (Dec. 6, 2012).

[319] *Id.*

[320] Catherine Elton, *Does Moderna Therapeutics Have the NEXT Next Big Thing?*, Bos. Mag. (Feb. 26, 2013, 5:00 AM), https://www.bostonmagazine.com/health/2013/02/26/moderna-therapeutics-new-medical-technology/.

[321] Robert Kuznia et al., *In quest for vaccine, US makes 'big bet' on company with unproven technology*, CNN (May 1, 2020, 1:33 PM), https://www.cnn.com/2020/05/01/us/coronavirus-moderna-vaccine-invs/index.html.

[322] Robert Weisman, *Boston Area Leading RNA Renaissance*, Bos. Globe (Feb. 5, 2014, 12:00 AM), https://www.bostonglobe.com/business/2014/02/05/companies-developing-rna-therapeutics-are-suddenly-upswing-biomedical-world/CmN09T59A6qu7nteLhzIjP/story.html.

[323] Robert Weisman, *Moderna Lands $450m in Funding for Drug Research Drugs*, Bos. Globe (Jan. 6, 2015, 3:01 PM), https://www.bostonglobe.com/business/2015/01/05/moderna-lands-million-funding-pioneer-drug-discovery/owNMr1NR27fR8sqblRDD1M/story.html.

[324] Damian Garde, *Lavishly Funded Moderna Hits Safety Problems in Bold Bid To Revolutionize Medicine*, Stat (Jan. 10, 2017), https://www.statnews.com/2017/01/10/moderna-trouble-mrna/.

[325] Jessie Scanlon, *Boston's Biotech Boom Could Bring Bold New Treatments for Cancer*, Bos. Globe (Aug. 5, 2018), https://www.bostonglobe.com/magazine/2018/08/02/boston-biotech-boom-could-bring-bold-new-treatments-for-cancer/fH7u5NLUdkA3YNTieIIzPI/story.html.

[326] Damian Garde, *Cambridge Biotech Moderna Said to Be Going Public*, Bos. Globe (Sept. 13, 2018), https://plus.lexis.com/api/permalink/89f509fb-ec81-471a-a48d-62ec29d7be62/?context=1530671.

[327] *Id.*

[328] *Entering a New Era in Vascular and Cardiac Regeneration Research*, AstraZeneca, https://www.astrazeneca.com/what-science-can-do/topics/next-generation-therapeutics/entering-a-new-era-in-vascular-and-cardiac-regeneration-research.html (last visited Oct. 2, 2022).

Cystic Fibrosis,[330] and with Alexion on a variety of rare diseases. Moderna received a grant from the U.S. to develop a Zika vaccine, and another from Gates Foundation to develop one for HIV. The company also pursued vaccines for the flu, Epstein-Barr virus, respiratory syncytial virus, and many, many others.

But the results did not match the rhetoric. In the U.S., drugs have to pass three phases of human clinical testing before being marketed, and, by the end of 2014, Moderna had yet to advance a single drug program even to Phase 1. As of its December 2018 IPO, it had advanced just a single drug to Phase 2, and *none* to Phase 3.[331]

TABLE 1: MODERNA'S CORPORATE ADOLESCENCE

	Aggregate Funds Raised[331]	*Valuation*[332]	*Employees*[333]	*Phase 1 Drugs*[334]	*Phase 2 Drugs*[335]
2010	$2.1M	-	-	0	0
2011	$2M	$9.78M	-	0	0
2012	$42M	$99.33M	25	0	0
2013	$177M	-	32	0	0
2014	$652M	$3B	145	0	0
2015	$702M	$3B	320	1	0
2016	$1.3B	$4.7B	300-400	4	0
2017	-	-	-	10	1
2018 (Pre-IPO)	$1.96B	$7.5B	680	10	1

[329] Martin Baccardax, *Moderna Shares Extend Gains as Jim Cramer Talks About Potential Cancer Vaccine*, THE STREET (Feb. 26, 2021, 9:45 AM), https://www.thestreet.com/investing/moderna-extends-gains-as-jim-cramer-talks-of-cancer-vaccine.

[330] Vertex, Press Release, *Vertex and Moderna Establish Exclusive Collaboration to Discover and Develop mRNA Therapeutics™ for Cystic Fibrosis* (Jul. 6, 2016), https://news.vrtx.com/news-releases/news-release-details/vertex-and-moderna-establish-exclusive-collaboration-discover.

[331] David Markus, *Drinks with The Deal: Goodwin Procter's Stuart Cable*, THE DEAL (Jan. 7, 2021), https://www.thedeal.com/podcasts/drinks-with-the-deal-goodwin-procters-stuart-cable/.

[331] Information comes from CB Insights database. https://www.cbinsights.com/company/moderna/financials.

[332] Information comes from CB Insights database. https://www.cbinsights.com/company/moderna/financials.

[333] *See* Gregory Huang, *Moderna, $40M in Tow, Hopes To Reinvent Biotech with "Make Your Own Drug*," XCONOMY (Dec. 6, 2012), https://xconomy.com/boston/2012/12/06/moderna-40m-in-tow-hopes-to-reinvent-biotech-with-new-protein-drugs/; Robert Weisman, *Moderna in Line for $240m Licensing Deal*, BOS. GLOBE (Mar. 21, 2013), https://www.bostonglobe.com/business/2013/03/20/moderna-therapeutics-receive-million-license-its-

Nor did Moderna use the other channel that biotech companies use to validate its technology: peer-reviewed publications. The company faced a steady barrage of negative press complaining about its failure to publish any results in scientific journals—a standard practice for biotech firms.[336]

The company went even further to protect its secrecy. It operated for several years in "stealth mode,"[337] with a website consisting only of a single page, describing the company's work in vague terms.[338] Scientists who applied to work at the company had to sign a confidentiality agreement even *before* being granted an interview—and once hired were prohibited from discussing their research with anyone, including spouses.[339] Similar confidentiality measures were imposed on companies that supplied lab equipment.[340] Even the company's investors were kept in the dark. The *Wall Street Journal* reported that Moderna had "so many investors clamoring to get in that it [could] afford to turn away any who ask too many questions" and as

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technology-drug-giant-astrazeneca/VAFlMn2lZaCDZ6A0oyHKSI/story.html; Weisman, *$450m, supra* note 323; Robert Weisman, *Drug Trailblazers Moderna, Juno Grab Forum's Spotlight*, Bos. Globe (Jan. 15, 2016), https://www.bostonglobe.com/business/2016/01/14/jpm/1KZxOlIGIFWm4rrHfbBf9N/story.html; Robert Weisman, *Moderna, Vertex to Collaborate on Cystic Fibrosis,* Bos. Globe (Jul. 7, 2016), https://www.bostonglobe.com/business/2016/07/06/moderna-vertex-collaborate-cystic-fibrosis/rEmPx5Ll746RmQL0oUNIiO/story.html; Robert Weisman, *Moderna Therapeutics Gets $200m More from Merck,* Bos. Globe (Jun. 30, 2016), https://epaper.bostonglobe.com/BostonGlobe/article_popover.aspx?guid=F0430e26-37f6-4fd4-b131-fd890cd04ff2&source=next; Moderna S-1.

[334] Moderna, Press Release, *Moderna Announces an Array of Clinical Advances and Outlines 2018 Priorities* (Jan. 8, 2018).

[335] *Id.*

[336] Editorial, *Research Not Fit To Print*, 34 Nature Biotechnology 115, 115 (Feb. 2016). (criticizing Moderna for failing to produce even "a single paper describing its therapeutic platform"); Joe McGauley, *Why This Secretive Tech Start-Up Could Be the Next Theranos*, Thrillist (Sept. 23, 2016, 12:01 AM), https://www.thrillist.com/tech/nation/what-does-moderna-therapeutics-do-why-is-it-a-silicon-valley-secret ("[L]ike Theranos, Moderna's ultra-secretive policies prohibit them from publishing any substantival data to prove their work . . . ."); Elie Dolgin, *The Billion Dollar Biotech*, Nature (June 4, 2015) ("something of a mystery" because "it has revealed very little of its research"); Luke Timmerman, *Move Over, Elon Musk: CNBC's No. 1 Disruptor This Year Is a Biotech Company, Moderna*, Forbes (May 12, 2015, 7:00 AM), https://www.forbes.com/sites/luketimmerman/2015/05/12/move-over-elon-musk-cnbcs-no-1-disruptor-this-year-is-a-biotech-company-moderna/?sh=33f64947637b ("Many people in biotech remain skeptical" about the company because it "has opted not to publish details about its science and technology in peer-reviewed journals."); Garde, *supra* note 324 (No one really knows any details about how their mRNA-based technology works (or how well).); Garde, *Ego*, *supra* note 1 ("loath to publish its work in Science or Nature, but enthusiastic on CNBC and CNN"); *see also* Erin Brodwin, *More Than Half of Today's Unicorn Health Startups Haven't Published Any Influential Science—and Some Experts Say That Raises the Risk of Another $9 Billion Flop like Theranos*, Bus. Insider (Jan. 30, 2019, 2:17 PM), https://www.businessinsider.com/unicorn-health-startups-not-enough-research-theranos-warning-2019-1 (criticizing Moderna (and others) for failing to publish data—a failure which the authors warned "could put us on the brink of the next Theranos").

[337] Servick, *supra* note 311.

[338] Elton, *supra* note 320. *But see* David Crow, *Secretive Moderna Yet to Convince on $5bn Valuation*, Fin. Times (Sept. 6, 2017), https://www.ft.com/content/ab138504-8c2e-11e7-a352-e46f43c5825d (stating that Moderna "went for the first 18 months without even a website").

[339] Elton, *supra* note 320.

[340] *Id.*

a result, some investors were "given only a peek at Moderna's data before committing millions to the company."[341]

The hype, the outrageous sums of money, the lack of any signs of progress, and the extreme secrecy together proved to be a good recipe for enormous skepticism. For instance, when Moderna inked its first deal with an established pharmaceutical company, the *New York Times* emphasized that it was "one of the largest initial payments in a pharmaceutical licensing deal that does not involve a drug already being tested in clinical trials."[342] *Boston Magazine* noted that the deal "seemed to raise as many questions as it answered" and reported that "some critics quietly grumbled that the company had yet to release any data or scientific papers that would allow outsiders to properly assess the grand claims it was making."[343] A former Moderna scientist told a reporter he found the sum of money to be "astonishing" given what he knew.[344] Others, reaching for an explanation, interpreted the move as a desperation play by AstraZeneca, which was experiencing its own struggles.[345]

Similarly, after the company raised $450 million in 2015, the *New York Times* noted that this was "somewhat of a remarkable figure for a company that does not yet have an experimental drug in clinical trials,"[346] and the *Boston Globe* pointed out that the company "has no approved drugs and all of its experimental programs are preclinical."[347] The next year, *Stat News* reported "signs Moderna has run into roadblocks with its most ambitious

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[341] Garde, *Ego*, *supra* note 1. Furthermore, some of Moderna's investors would not have been capable of making much of the data; the company raised substantial amount of capital from firms not "known as health-care specialists" reportedly because "[s]ome who focus on biotech were unwilling to invest, partly because they felt the company didn't publish much about its results and was less transparent about its progress on various drugs than some rivals." Loftus & Zuckerman, *supra* note 316.

[342] Andrew Pollack, *AstraZeneca Makes a Bet on an Untested Technique*, N.Y. Times (Mar. 21, 2013), https://www.nytimes.com/2013/03/21/business/astrazeneca-to-pay-240-million-to-moderna-therapeutics.html?_r=0.

[343] Elton, *supra* note 320; Luke Timmerman, *AstraZeneca Shells Out $240M Upfront for Moderna mRNA Drugs*, Xconomy (Mar. 21, 2013), https://xconomy.com/boston/2013/03/21/astrazeneca-shells-out-240m-upfront-for-moderna-mrna-drugs/ (observing "there aren't many deals that have been this big for a company that hasn't yet entered clinical trials").

[344] Servick, *supra* note 311.

[345] Phillip Broadwith, *AstraZeneca Partners with Moderna for $240 Million* ChemistryWorld (Mar. 20, 2013), https://www.chemistryworld.com/news/astrazeneca-partners-with-moderna-for-240-million/6003.article; Derek Lowe, A*straZeneca Makes a Deal with Moderna. Wait, Who?*, Science (Mar. 21, 2013), https://www.science.org/content/blog-post/astrazeneca-makes-deal-moderna-wait; Galen Moore, *Here's Why AstraZeneca CEO Pascal Soriot Is Betting Huge on a Tiny Cambridge Biotech*, Bos. Bus. J. (Mar. 23, 2013, 3:12 PM), https://www.bizjournals.com/boston/blog/mass_roundup/2013/03/astrazeneca-moderna-investment.html.

[346] Andrew Pollack, *Biotech Company Moderna Raises $450 million*, N.Y. Times (Jan. 5, 2015, 3:53 PM), https://archive.nytimes.com/dealbook.nytimes.com/2015/01/05/biotech-company-moderna-raises-450-million/.

[347] Weisman, *supra* note 323; Dolgin, *supra* note 336 (quoting industry expert: "From a science point of view, [Moderna's large valuation] doesn't seem to make sense."); *see also* Derek Lowe, *Leaving Moderna,* Science (Oct. 14, 2015), https://www.science.org/content/blog-post/leaving-moderna ("I don't think I've ever seen a startup biopharma company that has

projects," and quoted a former Moderna scientist suggesting the company was merely "a case of the emperor's new clothes."[348] And, in 2017, a former employee with inside knowledge suggested that Bancel was "getting kind of jittery" with the company's "lack of progress."[349]

Comparisons to Theranos became common. A prescient piece on *Xconomy* matched Moderna with (pre-collapse) Theranos and warned, "sooner or later there may be a backlash to all this stealthiness."[350] *Nature* ran an editorial warning that Moderna's credibility was "open to attack" just like Theranos' and that "the community may start to ask whether [it] can be trusted."[351] A 2016 post on the blog *Thrillest* made a detailed case for why Moderna was the "next Theranos."[352]

Skepticism was also fueled by a startling mid-course shift away from therapeutics to vaccines.[353] Moderna encountered safety failures caused by its delivery mechanism triggering the body's natural immune response. A particularly critical failure came in animal testing for a treatment of a rare disease called Crigler-Najjar syndrome (which can cause brain damage in infants) with Alexion pharmaceuticals. Moderna had heavily promoted this program to investors,[354] but the treatment was causing significant liver toxicity.[355] The partnership with Alexion fell apart,[356] and Moderna changed course. Since vaccines typically required only one or two injections, they posed a less significant risk of this dangerous immune response.[357] The company dropped "Therapeutics" from its name, rebranding as "Moderna Inc,"[358] and began emphasizing vaccines.[359] At the January 2017 J.P. Morgan Healthcare conference, Bancel made no mention of the Crigler-Najjar drug which he had heavily promoted at the same event the previous year, and instead focused on vaccine candidates.[360] Since vaccines were a much less lucrative field than treatments—both because they require fewer doses and because there is more competition in the market—the strategy shift raised

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so much money so early, and apparently has so much going on, that people still know so few details about.").

[348] Garde, *supra* note 2.

[349] Garde, *supra* note 324.

[350] Steve Dickman & Sultan Meghji, *Stealth Mode Is the New Sweet Spot for Some Biotechs,* Bos. Biotech Watch (Jul. 14, 2014, 6:12 AM), https://bostonbiotechwatch.com/2014/07/14/stealth-mode-the-new-sweet-spot-for-some-biotechs/.

[351] Editorial, *Research Not Fit to Print*, 34 Nature Biotechnology 115, 115 (Feb. 2016).

[352] McGauley, *supra* note 336.

[353] Damian Garde, *Secretive Biotech Opens Up*, Bos. Globe (Nov. 16, 2018).

[354] Garde, *supra* note 324.

[355] *Id.*

[356] *See* Kuznia et al., *supra* note 321; *see also* Press Release, Moderna, *Moderna Provides Update on mRNA Rare Disease Research and Development* Strategy (Jul. 27, 2017).

[357] *See* Kuznia et al., *supra* note 321; Damian Garde, *Another Moderna Departure,* Bos. Globe (Feb. 22, 2017).

[358] Moderna Registration Statement (Form S-1) at 9 (Nov. 9, 2018).

[359] Garde, *supra* note 324.

[360] *Id.*

some doubts about Moderna's financial prospects and the viability of its underlying technology.[361]

Growing skepticism was further exacerbated by a stream of abrupt departures of key leaders and scientists.[362] Rossi left in 2014 after "butting heads" with Bancel.[363] The Chief Information Officer departed the same year after just one year at the company.[364] In 2015, one outlet covered the "surprise departure" of the company's Chief Science Officer and president of R&D—which reportedly played into the "narrative" about the company in biotech circles that it was good at "raising cash, recruiting partners and spinning out technologies but never actually advancing a single therapy into clinical trials."[365] Leaders of the company's cancer and rare disease program both resigned after less than eighteen months.[366] In early 2018, Moderna "lost its head of vaccines just after the company raised $500 million on the promise of advancing vaccines into late-stage trials"[367] and just before the company was due to provide a readout of data from a Phase 1 trial of a new vaccine.[368] Given the seemingly remarkable promise of the technology and the company's substantial funding, commentators construed these high-level departures as an ominous signal. One person "close to the company" speculated that "[no] scientist in his right mind would leave that job unless there was something wrong with the science or the personnel."[369] Similarly, an influential tech blogger wrote: "[Y]ou wonder: if Moderna really is a rocket ship getting ready to launch and spray a formation of new drugs across the sky, then why are these people leaving?"[370]

Compounding these problems, the company was also fighting legal battles over intellectual property. An early internal report from founding investor Flagship Ventures warned that Moderna desperately needed a way around a key patent arising out of key early mRNA research.[371] Later, a former employee told reporters that Bancel "did a tremendous job of per-

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[361] Garde, *supra* note 326; Kuznia et al., *supra* note 321; Garde, *supra* note 2; Garde, *supra* note 324 (former manager: "Moderna right now is a multibillion-dollar vaccines company, and I don't see how that holds up.").

[362] Garde, *supra* note 357 (2017 report stating that Moderna had lost "more than dozen top executives since 2014"); Garde, *supra* note 2 (2016 report stating that "[a]t least a dozen highly placed executives have quit in the past four years, including heads of finance, technology, manufacturing, and science").

[363] Kuznia et al., *supra* note 321.

[364] Garde, *supra* note 2.

[365] Damian Garde, *Moderna's Top Scientist Steps Down Amid a Billion-Dollar R&D Push*, Fierce Biotech (Oct. 13, 2015, 5:49 PM), https://www.fiercebiotech.com/r-d/moderna-s-top-scientist-steps-down-amid-a-billion-dollar-r-d-push.

[366] Garde, *supra* note 2.

[367] Damian Garde, *Moderna's Head of Vaccines Quits After a Pivot to Vaccines*, STAT (Mar. 6, 2018), https://www.statnews.com/2018/03/06/modernas-head-of-vaccines-quits/.

[368] Angus Liu, *Moderna's Vaccines Head Steps Down as Multiple Programs Undergo Phase 1: Report*, Fierce Pharma (Mar 7, 2018, 8:18 AM), https://www.fiercepharma.com/vaccines/moderna-s-vaccines-head-steps-down-as-multiple-programs-undergo-phase-1.

[369] Garde, *supra* note 2.

[370] Lowe, *supra* note 347.

[371] Dolgin, *supra* note 336.

suading people to give the company money for technology that was not 100% theirs."[372] Major IP disputes continued to percolate in 2017 and 2018.[373]

During this challenging period, many complained about Bancel's lack of scientific background and disrespect for the scientific process.[374] Media outlets began reporting on the company's "toxic" work culture[375] and placed Bancel at the center. In one widely repeated charge, the CEO was accused of reacting to failed experiments "with reprimands and even on-the-spot firings" of the responsible scientists.[376]

c. Adulthood

These concerns hung over the company as it moved towards a December 2018 IPO. Financial analysts and journalists rang alarm bells that the company was overvalued.[377]

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[372] *Id.*

[373] Nathan Fardi, *Mysterious $5 Billion Biotech Moderna Hit with Legal Setback Related to Key Technology*, FORBES (Feb. 9, 2017, 9:32 AM), https://www.forbes.com/sites/nathanvardi/2017/02/09/mysterious-5-billion-biotech-moderna-hit-with-legal-setback-related-to-key-technology/?sh=7c8f1b375f78; Matthew Herper, *Despite Doubters, Moderna Raises $500 Million, Is Now Worth $7 Billion*, FORBES (Feb. 1, 2018, 3:29 PM), https://www.forbes.com/sites/matthewherper/2018/02/01/despite-doubters-moderna-raises-500-million-is-now-worth-7-5-billion/?sh=108b95aa781c (noting "questions about which delivery systems Moderna owns"); Crow, *supra* note 338 (noting "snag" to Moderna posed by an IP challenge).

[374] McGauley, *supra* note 336 ("a CEO who is not a PhD scientist"); Garde, *Ego*, *supra* note 1 ("a first-time biotech CEO" with "no experience running a drug development operation"); Garde, *supra* note 324 ("first-time biotech CEO"); Sabah Meddings, *Stéphane Bancel: Moderna's $5bn Man*, SUNDAY TIMES (Apr. 11, 2021, 1:00 PM), https://www.thetimes.co.uk/article/stephane-bancel-modernas-5bn-man-hbcngngk0 (discussing reviews of the company on Glassdoor describing toxic and hostile workplace).

[375] Garde, *supra* note 2; McGauley, *supra* note 336; Garde, *Another Moderna Departure*, *supra* note 357 ("unpredictable and often hostile").

[376] Garde, *supra* note 2. *See also* Kuznia et al., *supra* note 321 (Moderna's former director of Chemistry confirming Bancel punished technicians for failed experiments and even "fired them").

[377] Bob Oakes & Yasmin Amer, *This Biotech Unicorn Hopes to Revolutionize Drug Making, But It Has Its Skeptics*, WBUR (Jun. 6, 2018), https://www.wbur.org/news/2018/06/06/moderna-therapuetics ("[T]he story and the hype may have outpaced the realities of that science."); Tatiana Darie, *Ahead of IPO Moderna's Valuation Questioned*, BOS. GLOBE (Dec. 7, 2018, 8:47 PM), https://www.bostonglobe.com/business/2018/12/06/ahead-ipo-moderna-valuation-questioned/TMxj2bcKLSZnAYHv0mM6HI/story.html ("I don't understand how you get to that valuation. Not only are they early stage, but they're looking at pretty long and expensive development timelines"; quoting analyst: [T]he valuation is "disproportionately high relative to the stage of development"; quoting analyst: "Not only are they early stage, but they're looking at pretty long and expensive development timelines."); Charley Grant, *Biotech IPO Looks Worth Price*, WALL ST. J. (Nov. 13, 2018, 5:40 PM), https://www.lopinion.fr/economie/biotech-ipo-looks-worth-price ("Moderna spent nearly $360 million on operating expenses in the first nine months of the year, and that need for cash could intensify as clinical programs progress."); Corrie Driebusch & Jonathan Rockoff, *Biotech IPO Defies Rough Market*, WALL ST. J. (Dec. 7, 2018) (reciting a litany of concerns about the company, from its "high cash-burn rate," to "doubts about whether it can realize its promise").

These predictions proved prescient. Moderna's stock fell nearly 20% on the first day of trading[378] in what the *Wall Street Journal* called "one of the worst-performing opening days for a company going public."[379] The company's stock subsequently dropped further, closing the year down about 33%.[380] The stock spent virtually all of 2019 well below the IPO price.

Moderna's outside funding also seemed to dry up. Collaborations with large pharmaceutical companies—a critical source of income for the company (which still had no products on the market)—dropped off.[381] Meanwhile, administrative expenses remained significantly elevated, reflecting the increased compliance burdens of a public company.[382]

TABLE 2: MODERNA SELECTED FINANCIAL DATA (IN THOUSANDS)[383]

	2016	*2017*	*2018*	*2019*
Collaboration Revenue	101,536	176,974	122,512	48,036
Grant Revenues	6,860	28,851	12,556	12,173
R&D Expenses	(274,717)	(410,459)	(454,082)	(496,309)
General and Administrative Expenses	(57,450)	(64,722)	(94,252)	(109,620)

[378] Max Stendahl, *Moderna Shares Fall in First Day of Trading After Record IPO*, BOS. BUS. J. (Dec. 7, 2018, 4:15 PM), https://www.bizjournals.com/boston/news/2018/12/07/moderna-shares-fall-in-first-day-of-trading-after.html.

[379] Corrie Driebusch & Kimberly Chin, *Moderna Declines in Public-Market Debut*, WALL ST. J. (Dec. 7, 2018, 5:51 PM), https://www.wsj.com/articles/moderna-declines-in-public-market-debut-1544204238. For more on Moderna's weak stock performance, *see* Damian Garde, *In Coming Months, the Industry Could Run into a Reckoning with Reality*, BOS. GLOBE (Jan. 7, 2019); Lydia Ramsey, *Morgan Stanley Says Moderna Could Double After the Biotech's Massive Wipeout in 2018*, BUS. INSIDER (Jan. 2, 2019, 2:02 AM), https://www.businessinsider.in/morgan-stanley-says-moderna-could-double-after-the-biotechs-massive-wipeout-in-2018/articleshow/67355701.cms; Leah Rosenbaum, *Moderna Gets 3% Stock Boost From Early Clinical Data*, FORBES (Sept. 12, 2019, 8:31 PM), https://www.forbes.com/sites/leahrosenbaum/2019/09/12/moderna-gets-a-boost/?sh=6bf56d7c5432; *Moderna Slumps After IPO Lock-Up Expires*, REUTERS (Jun. 5, 2019); *Biotechs Regroup at JP Morgan Conference*, INT'L FIN. REV. (Jan. 4, 2019).

[380] Maureen Farrell & Corrie Driebusch, *IPO-Hungry Investors Look To Have Their Moment in 2019*, WALL ST. J. (Dec. 31, 2018, 11:45 PM), https://www.wsj.com/articles/ipo-hungry-investors-look-to-have-their-moment-in-2019-11546189200.

[381] *Infra* Table 2; *see also* Moderna, Inc., Annual Report (Form 10-K) (2020) at 222 ("Total revenue decreased by $74.9 million, or 55% in 2019, primarily due to a decrease in collaboration revenue.") [hereinafter Modern Form 10-K (2020)].

[382] Moderna Inc., Annual Report (Form 10-K) (2019) at 223 (attributing part of the increases in 2019 and 2018 administrative costs to various "costs in support of being a publicly traded company" and "in support of our public company readiness" respectively) [hereinafter Moderna Form 10-K (2019)].

[383] *Id.*

By the end of 2019, Moderna was facing "signs of an impending nose-dive."[384] In nearly a decade of existence, the company had spent unbelievable sums of money, built impressive research facilities, hired top scientists, partnered with leading pharmaceutical companies, and made bold claims about revolutionizing medicine—but still had no saleable products to show for it. Indeed, the company still hadn't even brought a single drug program to Phase 3 testing. And, at the same time, the company was burning through cash, struggling to identify new sources of revenue, and dealing with the new expenses associated with being a public company. Investors were losing patience.[385]

d. COVID

And then came COVID. Bancel was on vacation with his family when he saw the earliest reports of the disease moving through China. He immediately reached out to the National Institute of Health (NIH) to initiate a collaboration. By late January, the collaboration was in motion.[386] A Phase 1 trial began on March 4.[387] Later that month, Bancel reportedly wowed President Trump at a "vaccine summit" with a characteristically bold promise to develop an effective vaccine in record time.[388] The next day, the U.S. approved an extremely large grant to Moderna.

A key reason Moderna was in a position to move so quickly was its prior and ongoing work on related diseases with the NIH. According to the *New York Times,* Moderna had been working with the NIH "for years" to

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[384] Kuznia et al., *supra* note 321. As the company explained in its own public filings: "If we fail to raise capital or enter into such agreements as, and when, needed, we may have to significantly delay, scale back, or discontinue the development and commercialization of one or more of our programs." Moderna Form 10-K (2019) at 214.

[385] *E.g.*, Dominic Rushe, *Stampede of the Unicorns: Will a New Breed of Tech Giants Burst the Bubble?*, The Guardian (Mar. 30, 2019, 1:00 PM), https://www.theguardian.com/technology/2019/mar/30/lyft-ipo-stock-market-unicorns-uber-airbnb-slack (noting that Moderna fell below its IPO price and is "burning through cash"); Eliot Brown, *Lyft Leads Wave of Startups Debuting with Giant Losses*, Wall St. J. (Mar. 26, 2019, 6:13 PM), https://www.wsj.com/articles/lyfts-ipo-to-test-investors-appetite-for-money-losing-startups-11553515201 (noting that Moderna has "performed poorly on the public markets" and linking this to its large operating losses); Matt Krantz, *Tesla, 9 Other Companies Will Lose the Most Money This Year*, Investor's Bus. Daily (Oct. 3, 2019, 9:14 AM), https://www.investors.com/etfs-and-funds/sectors/tesla-which-10-companies-lose-most-money-this-year/ (listing Moderna as one of four money-losing health care stocks, and warning that "[l]osses like these never matter, until they do. And that day seems to be fast approaching"); David Saito-Chung, *Dow Jones Steps Lower as These Health Care Stocks Get Hammered; E-Commerce Leader Breaks Out*, Investor's Business Daily (Apr. 11, 2019, 2:30 PM), https://www.investors.com/market-trend/stock-market-today/growth-stocks-drift-lower-earnings-e-commerce-leader-breaks-out/ ("Wall Street sees the Cambridge, Mass., firm losing $1.51 a share in 2019.").

[386] Moderna Inc., Current Report (Form 8-K) (Jan. 21, 2020).

[387] Moderna Inc., Current Report (Form 8-K) (Mar. 4, 2020).

[388] Kuznia, *supra* note 321 (describing a "classic Bancel performance" at the White House roundtable, reflecting his "uncanny ability to say the right thing to the right people in the right moment").

"develop technology that could be used to design vaccines, a sort of plug-and-play system that would revolutionize how humanity confronts new pathogens."[389] The NIH and Moderna were reportedly planning a "war game" where the NIH would provide a "mock" virus and see how quickly Moderna could come up with a vaccine.[390]

But the most critical collaboration apparently began in May 2019, when Moderna began working with the NIH to develop an mRNA vaccine for the Middle Eastern Respiratory Syndrome (MERS) and the Nipah virus.[391] Numerous reports have confirmed that this work gave Moderna a substantial scientific advantage in the race to develop a COVID vaccine.[392] Notably, however, I have failed to find any indication that Moderna ever promoted or even mentioned these projects in any securities disclosures, earnings calls, press releases, or other public statements.[393]

Even after receiving the federal government's support for developing a COVID-19 vaccine, Moderna's skeptics were convinced the company was destined for failure. Moderna was of the most shorted stocks of 2020.[394] The

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[389] Sharon LaFraniere et al., *Politics, Science and the Remarkable Race for a Coronavirus Vaccine*, N.Y. TIMES (Nov. 21, 2020), https://www.nytimes.com/2020/11/21/us/politics/coronavirus-vaccine.html.

[390] *Id.*

[391] MODERNA THERAPEUTICS, INC., CONFIDENTIAL DISCLOSURE AGREEMENT 72, https://www.documentcloud.org/documents/6935295-NIH-Moderna-Confidential-Agreements.html.

[392] NIH Clinical Trial of Investigational Vaccine for COVID-19 Begins (Mar. 16, 2020), https://tinyurl.com/wcyl27j ("[NIH] and Moderna scientists already were working on an investigational MERS vaccine targeting the spike, which provided a head start for developing a vaccine candidate to protect against COVID-19."); Kuznia et al., *supra* note 321 (Collaboration gave it an "edge" and a "jump start."); David Heath & Gus Garcia-Roberts, USA TODAY (Jan. 26, 2021), https://www.usatoday.com/in-depth/news/investigations/2021/01/26/moderna-covid-vaccine-science-fast/6555783002/ (quoting email from NIH scientist, working with Moderna on another collaboration, to Bancel in early January: "If it's a SARS-like coronavirus, we know what to do.").

[393] Moderna, Inc., Moderna Press Release (Moderna Provides Business Updates and Reports Third Quarter 2019 Financial Results) (Nov. 6, 2019) (summarizing numerous "program highlights" including several on "prophylactic vaccines" but not mentioning MERS; also discussing new collaboration with Harvard but not mentioning NIH collaboration); Moderna, Inc., Moderna Press Release, (Moderna Provides Business Updates and Reports Second Quarter 2019 Financial Results.) (Aug. 7, 2019) (similar); Moderna, Inc., Moderna Press Release (Moderna Reports First Quarter 2019 Financial Result and Provides Business Updates.) (May 8, 2019) (similar).

[394] *E.g.*, Cristin Flanagan, *Moderna Vaccine Success Deepens Bite on Shorts to $1.85 Billion*, BLOOMBERG (Nov. 16, 2020, 10:04 AM), https://www.bloomberg.com/news/articles/2020-11-16/moderna-s-vaccine-success-takes-1-85-billion-bite-out-of-shorts?lead Source=UVerify%20wall ("[A]bout $2.13 billion of Moderna's float is shorted."); Cristin Flanagan, *Moderna Bears Face Possible Squeeze on Covid Vaccine Results*, BLOOMBERG (Nov. 11, 2020, 12:48 PM), https://www.bloomberg.com/news/articles/2020-11-11/moderna-s-covid-19-shot-is-next-on-deck-after-pfizer-s-success ($1.85 billion short interest); Lisa Pham, *Short Sellers Got Crushed in 2020 as Tesla, Moderna Soared*, BLOOMBERG (Dec. 10, 2020, 4:10 PM), https://www.bloomberg.com/news/articles/2020-12-10/wirecard-nmc-are-anomalies-in-a-year-that-crushed-short-sellers ("the biggest short bet in the biotech sector"); Cristin Flanagan, *Moderna's Vaccine Rally Takes $427 Million Bite Out of Shorts*, BLOOMBERG (May 18, 2020, 3:55 PM), https://www.bloomberg.com/news/articles/2020-05-18/moderna-s-vaccine-rally-takes-427-million-bite-out-of-shorts (more than $1.6 billion short interest); Bailey Lipschultz, *Moderna's 370% Rally Has Cost Short Sellers $1.5 Billion in 2020*, BLOOM-

New York Times reported that the Trump administration was "wagering" on Moderna, which had a "spotty track record[ ]" and a "penchant for self-promotion."[395] One former Moderna executive told reporters that he "would not let that [vaccine] to be injected in my body,"[396] and another called for people to view the company "with a little more skepticism."[397] Even Tyler Shultz got into the mix, telling reporters he was "worried another Theranos will happen" because "[t]he science side is moving really, really fast" and "[c]orners are going to be cut."[398]

This story has a happy ending. By the end of 2020, the vaccine's Phase 3 trial showed Moderna's vaccine to be highly effective and the FDA granted approval for emergency use. Moderna has also made its vaccine available outside the U.S., including half a billion doses to the World Health Organization for distribution to poorer nations.[399] The vaccine was eventually also determined to be safe and effective for children older than 6 months.[400] As of June 2022, more than 223 million doses of Moderna's COVID-19 Vaccine had been administered in the US.[401]

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Moderna's critics were not wrong. Moderna *was* overvalued and overhyped, and its technology *was* a disappointment. Before the pandemic, it's doubtful the company would have brought any product to market in 2020

BERG (Jul. 17, 2020, 3:51 PM), https://www.bloomberg.com/news/articles/2020-07-17/moderna-s-370-rally- has-cost-short-sellers-1-5-billion-in-2020 ("Roughly 10% of Moderna shares available for trading are currently sold short.").

[395] David Gelles & Heather Murphy, *Experts Cast Dubious Eye on Promise of Vaccine,* N.Y. TIMES (Aug. 10, 2020), https://www.nytimes.com/2020/08/09/business/coronavirus-vaccine-inovio.html.

[396] Kuznia et al., *supra* note 321.

[397] *Id.*; *see also id.* (Moderna's former CSO told reporters that he was puzzled by the government's trust in Moderna: "I don't know what their thinking was. Why so much? . . . I just don't know.").

[398] Ethan Baron, *Theranos Whistleblower Worries Coronavirus Drugs Rush Could Open Door to Bad Actors*, MERCURY NEWS (Jul. 30, 2020, 4:02 PM), https://www.mercurynews.com/2020/07/30/theranos-whistleblower-worries-coronavirus-drugs-rush-could-open-door-to-bad-actors/; *see also* Will Bunch, Opinion, *The Quackery Behind Trump's Covid-19 Fantasies*, PHIL. INQUIRER (May 26, 2020), https://www.inquirer.com/columnists/attytood/coronavirus-covid-vaccine-polio-moderna-theranos-20200526.html ("another Theranos"); Kuznia et al., *supra* note 321 (quoting one expert stating that Moderna had been "a little tight-fisted about their data" which he interpreted "to mean the results so far have been disappointing"); Dorit Rubinstein Ross, *The COVID-19 Vaccine Dilemma*, 6 ADMIN. L. REV. ACCORD 49, 49, 79 (2020) (chastising Moderna for "overselling" its vaccine before approval).

[399] Emily Rauhala & Erin Cunningham, *Moderna to Supply 500 Million Vaccine Doses to WHO's Struggling Covax Initiative*, WASH. POST (May 4, 2021, 4:15 PM), https://www.washingtonpost.com/world/moderna-vaccine-covax/2021/05/03/0837f4f4-ac0b-11eb-82c1-896aca955bb9_story.html.

[400] *Stay Up to Date with COVID-19 Vaccines Including Boosters*, http://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/children-teens.html (last visited Oct. 2, 2022).

[401] *Safety*, MODERNA, https://eua.modernatx.com/covid19vaccine-eua/recipients/safety?

or 2021, and even if it had done so, it's doubtful that this would have been sufficient to keep the company moving forward. In another universe (without COVID-19), Moderna might have come to resemble Theranos. Instead, it made an enormously beneficial social contribution. The next section considers how the story might have changed if the proposed new securities regulations were in place.

2. How Would Proposed Securities Regulation Reforms Have Impacted Moderna's Corporate Development?

Moderna achieved Unicorn status in 2014—four years before it went public and six years before COVID-19. Had they been in effect during Moderna's corporate adolescence, each of the proposed new securities regulations plausibly would have disrupted its corporate development and reduced the chances that the company would have been in a position to successfully develop a COVID-19 vaccine in rapid time in 2020.

a. More Disclosures

For Moderna's founders, CEO, and investors, maintaining utmost secrecy was paramount.[402] These actors knowingly took on the risk that their large investments in time, efforts, and money would result in total losses because of the prospect of *astronomical* success. And that potentially huge upside, in turn, depended on preserving maximum secrecy. In Bancel's words, extreme secrecy was necessary "for competitive reasons": "We said let's not teach the world how this works because we've invested a lot of money."[403] Moderna and its investors knew that other companies around the world were working on mRNA therapies and vaccines,[404] and wanted to maximize their prospects of being first to market and of dominating the markets for these revolutionary products.[405] Mandatory disclosures might well have undercut this advantage, potentially deterring the investments that enabled Moderna's success.

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[402] *Supra* Part B.1.ii (discussing extreme lengths Moderna went to maintain utmost secrecy, including avoiding scientific publications, requiring current and prospective employees to sign NDAs, and even hiding key details about its research from investors).

[403] Crow, *supra* note 338; *see also* Damian Garde, *After Rivals' IPOs, Will CRISPR Therapeutics Go Public or Stay Buttoned Down?*, STAT (May 12, 2016), https://www.statnews.com/2016/05/12/crispr-therapeutics/ ("In biotech . . . operating in secret can create a competitive advantage. Moderna . . . has no intention of going public for that very reason, according to its CEO.").

[404] *E.g.,* Moderna S-1, *supra* note 316, at 282 ("There are additional companies that are working on potential mRNA medicines. Companies with clinical programs with mRNA include BioNTech, CureVac, eTheRNA Immunotherapies, and Translate Bio and those with preclinical programs include Arcturus Therapeutics, Ethris, Genevant Sciences, and GlaxoSmithKline.").

[405] *E.g.*, Ingmar Hoerr, *Lessons Learned: The Start of mRNA Technology Development*, LIFE SCI. LEADER (Feb. 1, 2019) (noting that Moderna's founding prompted U.S. investors to begin looking to German mRNA competitors).

Mandatory disclosure might also have disrupted the company's development by forcing it to disclose material scientific failures along the way, triggering potentially harmful reactions from investors, regulators, competitors, and the public at large. As a private company, Moderna strategically limited and timed disclosures and thereby minimized blowback from these failures. The company's Chief Science Officer recently admitted as much: "We've had failures. We've gone down blind alleys. But because we've been quiet about it, nobody's seen that."[406] The inflexible rules of public disclosure would have made it much harder to sweep failures under the rug, and the resulting negative press, negative analyst coverage, and short-selling activities all might have impeded the firm's ability to continue to attract investment.[407] The same is true regarding the firm's major pivot from therapeutics to vaccines,[408] key high-level departures,[409] and other controversies.[410] Moderna might have found it more difficult to find willing investors or partners if its dirty laundry were on constant public display.[411]

Finally, full applicability of disclosure regulations would also restricted Moderna's ability to "hype" the company in public pronouncements—an important factor in attracting VC investors and corporate partnerships, and in keeping those investors and partners patient and happy as the company continued its long and bumpy road.

b. More Tradability

Mandated tradability would have made it impossible for Moderna to select and condition its investors to believe in the company's potential to produce revolutionary results but only after a very long and expensive period of research and development. Moderna reportedly exercised great care in selecting its private investors,[412] and continuously conditioned these investors over its corporate adolescence to expect a *long* time horizon and an

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[406] Servick, *supra* note 311.

[407] There is also a risk of investor litigation and SEC enforcement based on these events.

[408] *See supra* notes 355–63.

[409] *See supra* notes 364–72.

[410] *See supra* notes 373–78.

[411] *E.g.*, Pollman, *supra* note 11, at 392; Lipton, *supra* note 11, at 566; Westbrook, *supra* note 11, at 563; *see, e.g.*, LANGEVOORT, *supra* note 138, at 107 ("Many companies go through a rough patch, disappointing investors, but then invent their way out of the problem so they truly [sic] back on track. But the market, already once burned, remains doubtful. These companies face the dilemma that critics of short-termism stress: keep investing in the plan and risk the wrath of impatient shareholders, or manage to the market by doing things more likely to please the impatient. We're all worse off when the latter happens.").

[412] Peter Cohan, *After $240 Million AstraZeneca Deal, How Big Will Moderna Get?*, FORBES (July 12, 2013, 9:45 AM), https://www.forbes.com/sites/petercohan/2013/07/12/after-240-million-cash-deal-from-astra-zeneca-how-big-will-moderna-get/?sh=1ae7a1502aff (quoting Bancel stating that that he selected investors carefully because "when times get tough—as they inevitably do with biotech start-ups—I do not want the VCs battling it out with each other").

expensive R&D agenda.[413] These investors accepted that their investment came with a real risk of total failure[414]—a risk they tolerated because of the potentially remarkable upside. As one put it, "We always knew this was a big, binary bet."[415] As such, these investors were not only willing to invest large sums, they also supported steadily growing valuations, did not press for an early "exit," and did not press for Bancel's replacement—notwithstanding the many "bumps" in the road along the way such as scientific failures, the remarkable "cash burn" rate, the company's surprising and questionable "pivot" to vaccines, the surprising departures of high-level executives, increasingly negative press coverage, and the failure to advance even a single product to Phase 2 testing.

Tradability would have replaced these carefully screened and conditioned private investors with others likely to be less patient, less forgiving, and less inclined to buy fully into the company's revolutionary potential. Each of the "bumps" in the road Moderna encountered might have led to selloffs and drops in share value. Short-sellers might have bet against the firm, as they did after it went public, exerting further downward pressure. All of this might have made it that much more difficult to attract additional investments and partnerships necessary to fund its research. That's exactly what happened after the company's 2018 IPO: once the patient, private investors were replaced with ordinary public ones, the valuation dropped, and revenues dried up.

It may also have diminished the incentives of key early VC investors from providing extensive guidance and advice along the way. The company's initial and largest investor for many years—Flagship Pioneering—was experienced in the biotech startup universe, and provided extensive advice and guidance to the company throughout its adolescence. If Flagship had the option to unilaterally "exit" earlier in Moderna's lifecycle, it's possible that it would not have been quite so willing to invest so much time and effort in voice.

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[413] *E.g.*, Weisman, *supra* note 333 (quoting Bancel emphasizing that "clinical trials in cardiology are very long and very expensive"); Weisman, *supra* note 323 (quoting Bancel explaining the company had no plans to go public because it was "playing a very long game" and because "[i]t takes many years and a lot of time and cash to improve the performance of a new technology" and "[w]e believe we are in the beginning of a 20-year performance journey"); *Billion-Dollar Health Startups*, WALL ST. J. (Feb. 26, 2015, 9:20 PM), https://www.wsj.com/articles/billion-dollar-health-startups-1425003650 ("Moderna executives . . . say they are taking the long view as they attempt to change the way many diseases are treated."); Robert Weisman, *Moderna To Raise $600m More as It Develops 11 Drugs*, BOS. GLOBE (Aug. 29, 2016, 6:12 PM), https://www.bostonglobe.com/business/2016/08/28/with-drugs-development-moderna-seeks-more-from-investors/GV93rSqXAlPBRj0t8H8RHM/story.html (quoting Bancel: "We're playing a very long game.").

[414] *E.g.*, Meddings, *supra* note 374 (Before joining Moderna, Bancel told his wife the company had only a "5 percent" chance of working out.").

[415] Crow, *supra* note 338; Kuznia et al., *supra* note 321 (Bancel says he was "willing to take a career risk by working on something that might not work. But it would have to be something that, if it worked, would change the world.").

Tradability might also have sapped the motivation and drive of Moderna's CEO and key employees. Under current laws, these actors effectively locked themselves in to Moderna—their efforts would pay off only if the company reached a successful "exit," creating a powerful incentive for these actors to do everything they can to make that happen. But, if these individuals were free to sell off their shares mid-stream, they might have achieved substantial wealth from doing so and lost further incentive to push the company towards the finish line.

Further, tradability might have also exposed Moderna to the forces of stock-market discipline. As the company's short-term stock price came to play an increasing role in dictating the company's decision-making, the company might have come under increasing pressure to abandon its resource-intensive, high-cash-burning, long-term "portfolio" strategy and instead focus around a smaller number of most promising candidates. The company's "pivot" away from the lucrative world of therapeutics and towards the less profitable and more competitive vaccine universe might have been rejected and abandoned under the shadow of potential shareholder blowback.

Finally, tradability might have led to stock drops and subsequent securities class actions based on disclosure violations related to key scientific failures, toxic workplace conditions, the pivot to vaccines, and the departures of high-level personnel. These suits would have been costly in both real and reputational terms, subtracting resources away from Moderna's R&D effort and potentially deterring future investments and partnerships.

c. More Public Enforcement

In a universe of beefed-up SEC enforcement against private issuers, it is not implausible to imagine the teenage Moderna getting into some regulatory trouble. As discussed above, the company very well might have made some materially misleading statements or omissions regarding key scientific failures,[416] its strategic pivot to vaccines,[417] the departures of key personnel in close proximity to major corporate events,[418] intellectual property disputes,[419] or promises regarding its expectations for bringing products to human trials.[420] The seemingly endless stream of former Moderna employees willing to say bad things about the company to reporters would have made it easy for the SEC to build a case and prevent the "next Theranos," as Moderna was rumored to be.

Such an action could have been devastating. It could have made it harder to attract investors and made it much more difficult to grow. Bancel might have been individually liable and might have been forced to resign as

[416] *Supra* text accompanying note 350.
[417] *Supra* text accompanying notes 355–63.
[418] *Supra* text accompanying notes 364–72.
[419] *Supra* text accompanying notes 327–28.
[420] *Supra* text accompanying notes 373–75.

CEO. Also, perhaps Moderna's secrecy would have been destroyed through the course of the litigation and enforcement activity—competitors might have benefitted at a look at Moderna's books.

d. More Whistleblowers

Enhanced whistleblower protections for Moderna's employees might have also distracted the company from its research function. Moderna seems to have produced an unusually large number of disgruntled former executives and other employees willing to say nasty things about the company to the press. It's conceivable that some of these employees might have pursued whistleblower anti-retaliation litigation. At a minimum, this would have forced the company to reallocate resources towards defending and settling these lawsuits and away from research.[421] It's also possible that the impact of these suits could have been even more significant—catalyzing some "publicness" backlash against Bancel and the company for misleading investors, hiding scientific failures, overhyping its technology, stealing IP, and/or maintaining a toxic workplace. Again, finding willing investors or research partners might have become more difficult.

V. Unicorn Regulation for the Next Crisis

Political leaders, scholars, journalists, advocates, and citizens have recently converged on the securities laws as a promising avenue for meaningful action on climate change. Proponents have been particularly focused on one mechanism: mandatory disclosure of information regarding carbon emissions and climate risks.[422] In the Spring 2022, the SEC put forward a regulatory proposal to implement this policy.[423]

But mandatory disclosure is not the only instrument in the securities regulation toolkit for combatting climate change. Nor is it necessarily the most powerful.

The same regulatory architecture that has helped create the vibrant private market ecosystem analyzed above has also given rise to an explosion in climate-related innovation. One report calculated that, in the most recent twelve month period, venture capital firms invested nearly $90 billion dollars in "climate tech" startups, including companies working to mitigate climate change by reducing or sequestering emissions; to help us adapt to the impacts of climate change; and to help us understand climate change and its

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[421] *See* Pollman, *supra* note 11, at 391.

[422] For some key recent discussions of mandatory climate disclosure, *see* Madison Condon, *Market Myopia's Climate Bubble*, 2022 Utah L. Rev. 63, 126 (2022); Cynthia A. Williams & Donna M. Nagy, *ESG and Climate Change Blind Spots: Turning the Corner on SEC Disclosure*, 99 Tex. L. Rev. 1453, 1455 (2021); Virginia E. Harper Ho, *Modernizing ESG Disclosure*, 2022 U. Ill. L. Rev. 277, 279–80.

[423] SEC, The Enhancement and Standardization of Climate-Related Disclosures for Investors, 87 Fed. Reg. 21,334 (proposed Apr. 11, 2022).

impacts through data.[424] That's a stunning figure, representing fourteen cents of every VC dollar.[425] By comparison, the Inflation Reduction Act recently passed by Congress and signed by President Biden that has been hailed as "the most significant federal investment in history to counter climate change" would reportedly invest about four times that amount in climate and energy programs[426]—which means that private investment could overtake the "most significant federal investment in history" in just over four years if it continued at the same rate.[427]

This flood of VC investment has led to the proliferation of climate tech Unicorns—as many as seventy-eight in current operation, according to the recent PWC report.[428] Some current/recent climate-tech Unicorns are well-known, such as the electric-car makers Tesla (IPO valuation = $1.5 billion) and Rivian (IPO valuation = $66 billion); the meat-replacement purveyors Beyond Meat (IPO valuation = $1.5 billion) and Impossible Foods (latest private valuation = $4 billion); smart-thermostat maker Nest Labs (acquisition valuation = $3.2 billion); dairy-replacement company Oatly (latest private valuation $2 billion); and carbon-neutral shoe-maker Allbirds (latest private valuation $1.7 billion). But there are many others. Zymergen (IPO valuation = $2.8 billion) and Gingko Bioworks (SPAC valuation = $17 billion) biologically synthesize materials for use in a wide range of industries (including agriculture, cosmetics, electronics, pharmaceuticals, consumer goods, and others) that can be substituted for less climate-friendly materials.[429] Planet Labs (latest private valuation $2.2 billion) relies on a fleet of Earth-imaging satellite to collect and process information about the changing planet that is used for various climate-change policy initiatives.[430] Black-

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[424] State of Climate Tech 2021, Scaling Breakthroughs for Net Zero, PWC, https://www.pwc.com/gx/en/sustainability/publications/assets/pwc-state-of-climate-tech-report.pdf.

[425] *Id.*

[426] Emily Cochrane, *Senate Passes the Climate, Health and Tax Bill, with All Republicans Opposed*, N.Y. Times (Aug. 7, 2022), https://www.nytimes.com/2022/08/07/us/politics/climate-tax-bill-passes-senate.html; Jim Tankersley, *Biden Signs Expansive Health Climate and Tax Law*, N.Y. Times (Aug. 16, 2022), https://www.nytimes.com/2022/08/16/business/biden-climate-tax-inflation-reduction.html.

[427] To be sure, the comparison is limited. VC investments come with different conditions, expectations, and strings attached than do the various forms of federal investments contained in the Inflation Reduction Act. Further, the current economic realities may indicate a pullback in VC investments of all types. Nevertheless, the comparison serves to illustrate the potential significance of VC investment in climate startups.

[428] PWC, *supra* note 424, at 11.

[429] *E.g.*, Michael J. de la Merced, *Zymergen Raises $130 Million in New Round of Financing*, N.Y. Times (Oct. 12, 2016), https://www.nytimes.com/2016/10/12/business/dealbook/zymergen-softbank-series-b-financing.html; The Bio Revolution: Innovations transforming economies, societies, McKinsey Global Institute, at 43–44 (May 2020), https://www.mckinsey.com/industries/life-sciences/our-insights/the-bio-revolution-innovations-transforming-economies-societies-and-our-lives; *id.* at 130; Alex Howlett, *From Smarter Machines to Greener Products,* Fin. Times (Dec. 5, 2019), https://www.ft.com/content/d9074342-0797-11ea-a958-5e9b7282cbd1.

[430] Kurtis Alexander, *Brown Announces California Plan to Launch Satellite to Track Climate Change*, S.F. Chron. (Sept. 15, 2018), https://www.sfchronicle.com/science/article/

Rock CEO Larry Fink recently predicted that "the next 1,000 unicorns . . . won't be a search engine, won't be a media company, they'll be businesses developing green hydrogen, green agriculture, green steel and green cement."[431] We are well on our way towards Fink's prediction coming true.

These climate-tech companies are risky. Their technologies may fail; most probably will. Some are challenging entrenched incumbents who have powerful incentives to do whatever is necessary to resist the competitive threat. Some may be trying to change well-established consumer preferences and behaviors. And they all face an uncertain regulatory environment, varying widely across and within jurisdictions. Like other Unicorns, they may have highly empowered founder CEOs who are demanding, irresponsible, messianic, or abusive. They may also have core investors who do not fully understand the science underlying their products, who are denied access to basic information, and who press the firm to take risks to achieve astronomical results.

And yet, they may represent an extremely important resource for our society to weather and mitigate the harms from climate change. One of these companies may be the Moderna of climate change. That possibility translates into the prospect of a huge payout for corporate investors and for society at large. The SEC and Congress deserve credit for this state of affairs. The bipartisan JOBS Act of 2012 and the other regulatory actions that have enabled the rise of Unicorns generally have also given rise to a very favorable investment ecosystem for climate innovation.

Recognizing that the current status quo of securities regulation is enabling significant investment in climate tech is urgently needed because it is critical for a policy choice that the SEC is about to face. Because the SEC's recent climate disclosure proposal does not apply to private companies and may cause some companies to go private or stay private, some influential commentators have urged the agency to close this loophole by forcing all companies into public company regulation.

For instance, Leo Strine and other corporate law heavy hitters recently filed a comment letter on the SEC's climate proposal warning that "it will be difficult for the Commission to fulfill its worthy intention of requiring disclosure of valuable information about climate risk and impact for investors without addressing the reality that there are private companies that are larger in scale and pose more climate-related investor risk than many public companies" and that "investors and our economy will not be well-served" if the proposal contributes to "more large companies with high investor impact to

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Brown-announces-California-plan-to-launch-13230706.php; Lara Sinclair, *Planet Labs Maps Out Innovative Disaster Plan*, The Australian (Nov. 4, 2014); Aaron Clark, *New Satellites Could Pinpoint Top Greenhouse Gas Offenders*, Bloomberg (Apr. 17, 2019), https://www.bloomberg.com/news/articles/2019-04-17/new-wave-of-satellites-could-pinpoint-greenhouse-gas-offenders.

[431] Catherine Clifford, *BlackRock CEO Larry Fink: The Next 1,000 Billion-Dollar Startups Will Be in Climate Tech*, CNBC (Oct. 25, 2021, 4:35 PM), https://www.cnbc.com/2021/10/25/blackrock-ceo-larry-fink-next-1000-unicorns-will-be-in-climate-tech.html.

go private."[432] The solution, according Strine et al., is for the SEC to force Unicorns to go public by imposing a new regulatory cap on private placements—removing the exemption from public offering rules for "offerings that exceed a certain size or are undertaken by issuers exceeding a certain size."[433] Similarly, in her October 2021 speech calling for a Unicorn crackdown, Commissioner Lee warned that "the opacity" of private markets "could operate to obscure systemic risks such as those posed by climate change."[434]

But, if the goal is to mitigate societal climate risk,[435] cracking down on Unicorns to protect climate disclosure would be self-defeating. The SEC should be *encouraging* companies to invest in risky technologies that may mitigate climate change—not discouraging it. At a minimum, before embracing the policy recommended by Strine, Lee, and others, the agency should carefully weigh the potential costs of diminished investment in climate tech innovation against any benefits from a marginally shored up climate disclosure regime.

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[432] Letter from Alan Beller, Daryl Brewster, Robert Eccles, Carmen Lu, David Katz & Leo Strine to Vanessa Countryman, Re: File NO. S7-10-22 (June 16, 2022) at 24–25 n.40, https://www.wlrk.com/docs/Comment_Letter_on_Climate_Related_Disclosures.pdf.

[433] *Id.*

[434] Lee*, supra* note 93.

[435] While some proponents of mandatory climate disclosure have attempted to minimize litigation risk for the rule by insisting that its sole purpose and function is to help investors, others (inside the SEC and out) have stated that the rule is intended to help mitigate harms from climate change more broadly. *E.g.*, SEC Comm'r Allison Herren Lee, *Remarks at the PRI/LSEG Investor Action on Climate Webinar* (Oct. 20, 2021) ("[B]etter data can accomplish a great deal. After all, it's not just investors who will benefit from the information. All policymaking should flow from reliable data as well. The U.S. has now emphasized a 'whole of government' approach to climate change, making it a central consideration across the government's domestic and foreign policy. Not only will enhanced climate disclosure inform markets, it can more broadly inform the wider spectrum of climate policymaking – policymaking that deserves incisive, informed, and - importantly - swift attention."); The White House, Fact Sheet: Biden Administration Roadmap to Build an Economy Resilient to Climate Change Impacts (Oct. 15, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/10/15/fact-sheet-biden-administration-roadmap-to-build-an-economy-resilient-to-climate-change-impacts/ (listing mandatory SEC climate disclosure as part of the Biden Administration's "government wide" strategy to "measure, disclose, manage and mitigate the systemic risks climate change poses to American families, businesses, and the economy"); *see also* Matthew Goldstein & Peter Eavis, *The S.E.C. Moves Closer to Enacting a Sweeping Climate Disclosure Rule*, N.Y. Times (Apr. 5, 2022), https://www.shrm.org/executive/resources/articles/pages/sec-and-climate-change-rules-.aspx (covering the SEC's approval of its proposed mandatory climate disclosure rule as something "long demanded by *environmental* advocates" that would "bolster the Biden administration's stalled *environmental* agenda" and might "give investors more leverage in *forcing changes to business practices that contribute to rising global temperatures*") (emphasis added). Thus, at least some (and probably most) supporters of the mandatory climate disclosure believe (or hope) the proposal will help mitigate *society-wide* harms from climate change.

VI. Towards a Real Evaluation of Unicorn Costs and Benefits[436]

Policymakers and scholars are well justified in devoting substantial attention to Unicorns. These companies represent a significant new phenomenon. A careful weighing of the costs and benefits for all affected interests is undoubtedly called for. All regulatory options should be on the table.[437]

Unfortunately, the debate has been clouded by a host of questionable assumptions, unfounded claims, and overheated rhetoric. Before concluding this paper, I turn to identify and critique some of these misleading ideas and themes that seem to come up again and again in calls for Unicorn reform.

A. *"Make Securities Regulation Great Again"?*

Some Unicorn reform proponents rely on a kind of regulatory conservatism or nostalgia. Just beneath the surface of many calls for reform lurks an idea that securities regulation is just *supposed* to work a certain way . . . simply because that's the way it has worked in the past. Commissioner Lee's landmark October 2021 speech embodies this mode.[438] She anchors her call for a dramatic expansion of SEC's footprint in private markets by calling back to two moments in regulatory history: "We've been down this road before," she claims, pointing to the 1930s, when Congress created the mandatory disclosure regime, and the 1960s, when Congress expanded it to OTC markets.[439] In both episodes, Lee explains, the government responded to opacity in large segments of the capital markets by imposing new disclosure obligations. Therefore, Lee concludes, the same regulatory approach must be the answer to the current situation.

Some reform-minded academics also fall into this mode. Pollman, for instance, seems to ground her call for stepped-up SEC enforcement against private companies "[a]bove all" on the fact that doing so would preserve the "long-standing" proportional allocation of enforcement between public and private markets based on the "sheer size" of those markets—the implication being that a proportional allocation of enforcement resources based on valuation is good *because* it's the traditional way of doing things.[440] Langevoort and Sale similarly call for a return to what they say securities

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[436] This section develops arguments I presented at the Plenary Panel on the Tenth Anniversary of the JOBS Act at the 2022 National Business Law Scholars Conference, convened by George Georgiev. I am grateful to the organizers of the conference, to Professor Georgiev, and to the other panelists and audience participants for many useful comments and suggestions.

[437] Further, the nature of private markets significantly constrains the availability of relevant information. Policymakers will have to act based on incomplete understanding of the facts.

[438] Lee, *supra* note 93.

[439] *Id.* The fact that both of Lee's prior examples of transformative new regulation involved action by Congress raises the question of whether the SEC can really go it alone this time. *See* Platt, *Legal Guardrails*, *supra* note 71.

[440] Pollman, *supra* note 11, at 394.

regulation has done "for much of its history"— namely, limit the expansion of private markets.[441]

But the mere fact that regulation used to operate in a certain way is not, itself, a good reason to make sure it works the same way now. The old approach may have been sub-optimal or downright counterproductive. Or the old approach may have been perfectly well-adapted for the markets and economy at the time, but ill-suited for contemporary realities.

Further, the rhetoric of regulatory nostalgia belies the fact that we are now ten plus years into the new regime. Thus, it is the *traditionalists* who are calling for a radical break with present practice to restore the old order.

Regulatory tradition should inform current debates, not end them. That is, history does not excuse policymakers from wrestling with the costs and benefits competing approaches would have today.

B. De-de-regulation?

A related move in many calls for Unicorn reform is the attribution of the current status quo to a campaign of "deregulation."[442] This rhetoric is likely aimed at winning left-of-center supporters to the cause; readers may associate "deregulation" with conservative Republican politics and, if they are liberals or Democrats, may feel a strong ideological pull to support the Unicorn reform camp. The simple narrative is that Unicorns are the product of deregulation and, therefore, re-regulation is warranted to rein them in.

But the rise of Unicorns does not fit within simple left/right political narratives about regulation/deregulation. Unicorns are products of a regulatory environment that is, in some ways *more* tightly regulated than their public company counterparts. There are significant regulatory restrictions on the tradability of private company securities and on who may invest in these private companies—restrictions that still do *not* apply to public companies.[443] And these unique regulatory restrictions have played a key enabling role in the rise of Unicorns. As discussed above, regulatory restrictions on tradability of private company shares may facilitate long-term relationships between VC investors and founders which, in turn, may enable the risky long-term investments that give companies the runway they need to produce

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[441] Langevoort & Sale, *supra* note 11, at 1383.

[442] Lee*, supra* note 93, at n.11 (discussing "deregulatory examples" that allowed private markets to expand); Langevoort & Sale, *supra* note 11, at 1384 (discussing the "deregulation party" that helped precipitate the rise of private markets); Elizabeth de Fontenay, *The Deregulation of Private Capital and the Decline of the Public Company*, 68 Hastings L.J. 445 (2017) (discussing the "deregulation of private capital"); Jones, *supra* note 11, at 169 (emphasizing the "deregulatory reforms" that "weakened or eliminated the principal mechanisms that imposed discipline on start-up company founders"); Georgiev, *Breakdown, supra* note 11, at 231, 265–74 (discussing the "deregulatory cascade" that produced the rise of private markets); *see also* Winship, *supra* note 11, at 677 (discussing the role of "[r]elaxed" regulation of private companies).

[443] Wansley, *supra* note 11, at 1242–44.

revolutionary technologies and mount challenges to entrenched players. Pushing private companies to public status would mean taking on the more laissez faire regulatory approach to tradability and would potentially undercut this beneficial lock-in effect.

While characterizing Unicorns as a product of deregulation may be very effective political rhetoric, it is not an accurate or complete account of the regulatory environment that has given rise to Unicorns. Relying on this narrative, however attractive as a matter of politics, is not a sound basis for policymaking.

C. Are Unicorns Permanently Avoiding Public Company Status?

A key premise underlying many calls for Unicorn reform is that these companies are permanently or indefinitely avoiding public markets and the public company regulation that comes along with it. The idea here is that the entire securities regulation regime hangs in the balance, with companies now able to permanently opt out. For instance, Commissioner Lee's October 2021 speech compared the rise of Unicorns to two prior historical moments—the 1930s and the 1960s—where large numbers of companies were permanently operating outside of any kind of government regulation or transparency.[444] Georgiev claims that "[s]ecurities law has gone from a mandatory regulatory scheme to one that is largely elective and subject to 'issuer choice'."[445] Similarly, Gabriel Rauterberg and Elisabeth de Fontenay claim that we are now in an "'issuer choice' regime, in which large, successful private firms can remain private indefinitely while still enjoying growth."[446] And, in an earlier piece, de Fontenay similarly warned that "firms are increasingly declining whatever it is that the public side still has to offer them."[447]

But the available evidence seems to show that most Unicorns are merely ***delaying*** their transition to public company status, not ***avoiding*** that status indefinitely. For instance, a recent study coauthored by Abe Cable and the Brattle Group found that, of the 115 companies that were Unicorns in 2015, the majority (83) of those companies had exited by 2022 through IPO (49), reverse merger (7), or traditional merger/acquisition (27), and only 25 were still operating as privately held companies.[448] Similarly, in an earlier study, Cable found that, of the 32 companies that were Unicorns in 2014, the majority (22) had exited by 2020 via IPO (15) or sale (7), and only 6 were

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[444] Lee, *supra* note 93.

[445] Georgiev, *supra* note 11, at 278.

[446] Elisabeth de Fontenay & Gabriel Rauterberg, *The New Public/Private Equilibrium and the Regulation of Public Companies*, 2021 Colum. Bus. L. Rev. 1199, 1205–06.

[447] De Fontenay, *supra* note 442, at 461.

[448] Adrienna Huffman et al., *The Unicorn Initiative—Exits* (Mar. 31, 2022) https://www.brattle.com/wp-content/uploads/2022/04/2022-03-31__Unicorn-Initiative-Final-Report.pdf. The remaining 7 companies had failed. *Id.*

still operating as privately held companies.[449] Indeed, even some of the reform proponents who use the strong rhetoric quoted above acknowledge elsewhere that companies are generally delaying public status not avoiding it altogether.[450]

Thus, the claims of Unicorn reformers that companies are permanently opting out of the regime or that the regime is now entirely "optional" or "elective" seem to be somewhat overstated. To be sure, the costs and benefits of such delayed exit may be significant and certainly worth examining by policymakers. But the stakes would appear to be substantially lower than what the reformer rhetoric might suggest.

D. Regulatory Incoherence?

Another common claim made by Unicorn reformers is that the current regime is "illogical" (or "paradoxical" or "incoherent" or "less coherent") because it allows two equally large companies to operate under two different legal regimes if one is public and the other still private. This rhetoric leads a reader to believe that it is self-evident that some change is needed to fix this incoherence.

For instance, Georgiev frames his analysis around the "regulatory paradox" that "it is possible today for two firms that are *identical* in virtually every respect— business model, size and scope of operations, enterprise value, access to capital, number of shareholders, number of employees, and so on—to have *widely different* regulatory obligations."[451] Commissioner Crenshaw picked up on the same characterization, citing with approval Georgiev's framing of the central regulatory "paradox" created by Unicorns.[452] De Fontenay and Rauterberg similarly claim that the regime has become "less coherent" because firms' going public decisions are no longer "principally driven by capital raising" and are instead "now shaped by a much larger and more varied set of factors."[453]

But this rhetoric does not hold up to scrutiny. First, the change is one of degree, not of kind. The core criteria for whether a company is subjected to public company regulation is the same as it has always been: whether the company's managers have, in their discretion, weighing all the relevant factors, elected to go (stay) public. The regime has always been *highly* discretionary, with companies exercising substantial freedom to make the decision

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[449] Abraham J.B. Cable, *Time Enough for Counting: A Unicorn Retrospective*, 39 Yale J. Reg. Bull. 23, 26, 36 (2021). The remaining companies had failed. *Id.*

[450] *E.g.*, Georgiev, *supra* note 11, at 311 ("[M]ost large private firms do eventually elect to transition to public company status."); De Fontenay, *supra* note 442, at 447 ("Rather than rushing toward an IPO, these companies are delaying going public for as long as they can possibly avoid the securities laws' net.").

[451] Georgiev, *supra* note 11, at 224.

[452] Crenshaw, *supra* note 97.

[453] De Fontenay & Rauterberg, *supra* note 446, at 1204–06.

based on a vast array of idiosyncratic characteristics and factors.[454] The main difference is that, today, the discretion has expanded for the *largest* companies. There is nothing new about the fact that we have many small and mid-cap private companies that closely resemble small- and mid-cap public companies. If the current regime is a "paradox," the old one was too.

Second, as stated above, the scope of expansion of discretion for large companies to go public has been overstated. Available evidence suggests that large companies are not indefinitely avoiding public status but merely delaying it by a few years. So even assuming that the expansion of discretion makes the regime less "coherent" the effect is limited to the few extra years that these large companies spend in private status.

Third, and most fundamentally, the expansion of large companies' discretion to decide when to go public might impose some important new costs and benefits on relevant interests but does not make the regime less "coherent." Even if it is true (as the critics suggest) that an important function of the securities regulation regime is to regulate the largest and most significant companies, this is not the *only* function of securities regulation regime. To the contrary, the regime is also supposed to promote "capital formation."[455] The expansion of large company discretion to determine when to go public seems to be serving this interest fairly well—with positive outcomes for society at large (as illustrated by the Moderna case study above).[456] To be sure, there may be significant costs associated with this change as well—for capital formation, investor protection, or other interests the regime is supposed to serve. And, it's also possible that further analysis may show that the aggregate costs outweigh the benefits. But calling the change "incoherent" is misleading because it falsely suggests that no legitimate goals of the securities regulation regime have been advanced by the change. That is simply not the case.

Conclusion

In 2016, Donald Langevoort speculated that "it would take only one big private company scandal" to call into question the regulatory regime that "lets companies choose whether they want legal accountability or not," but

[454] *See* De Fontenay and Rauterberg, *supra* note 446, at 1206 (acknowledging that "capital raising was never the sole determinant of firms' going-public decisions" and the "large literature . . . document[ing] the many determinants of firms' decisions to cross the public/private divide").

[455] *E.g.*, U.S. SEC, What We Do, https://www.sec.gov/about/what-we-do ("For more than 85 years since our founding at the height of the Great Depression, we have stayed true to our mission of protecting investors, maintaining fair, orderly, and efficient markets, and facilitating capital formation.").

[456] *Cf.* Pollman, *supra* note 11 ("[R]easonable minds might differ regarding how to balance the goals of investor protection and capital formation.").

warned that "[n]o doubt some of that response to scandal would be bad regulation, maybe even quackery."[457]

There is no question that some Unicorns have engaged in dangerous and illegal behavior and imposed significant harms to investors, workers, consumers, and society at large. Policymakers and scholars have justifiably been asking whether a new approach to Unicorn securities regulation is needed. But, for now, at least, I think the answer is no. Decades of corporate law scholarship suggest that pushing Unicorns towards public company status might simply amount to replacing one set of bad incentives with another. It's also very hard to see how new regulations would have positively changed the outcomes in the two main cases used to justify them—Uber and Theranos. Perhaps most importantly, altering securities regulation of Unicorns threatens to undercut the innovation and other social benefits they provide. The story of Moderna is a case in point. As corporate/securities scholars and policymakers move forward from the COVID-19 crisis and look towards the next one of climate change, they should not ignore the massive social value that securities regulation can provide—by *maintaining* a separate space for highly innovative companies to grow without having to "go through [their] adolescence in public."[458]

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[457] Langevoort, *supra* note 138, at 166.
[458] Garde, *supra* note 2 (quoting President of Moderna).