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Eric L. Talley
Columbia Law School, etalley@law.columbia.edu

Michal Barzuza
University of Virginia School of Law, mbarzuza@virginia.edu

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LONG-TERM BIAS

Michal Barzuza*
and Eric Talley**

An emerging consensus in certain legal, business, and scholarly communities maintains that corporate managers are pressured unduly into chasing short-term gains at the expense of superior long-term prospects. The forces inducing managerial myopia are easy to spot, typically embodied by activist hedge funds and Wall Street gadflies with outsized appetites for current quarterly earnings. Warnings about the dangers of "short termism" have become so well established, in fact, that they are now driving changes to mainstream practice as courts, regulators and practitioners fashion legal and transactional constraints designed to insulate firms and managers from the influence of investor short-termism. This Article draws on academic research and a series of case studies to advance the thesis that the emergent folk wisdom about short-termism is incomplete. A growing literature in behavioral finance and

* Caddell & Chapman Professor of Law; Nicholas E. Chimicles Research Professor of Business Law and Regulation, University of Virginia School of Law.

** Isidor and Seville Sulzbacher Professor of Law; Co-Director, Millstein Center for Global Markets and Corporate Ownership, Columbia Law School. We thank Jennifer Arlen, Oren Bar-Gill, Bobby Bartlett, George Cohen, John Duffy, Jill Fisch, Ron Gilson, Jeff Gordon, Zohar Goshen, Assaf Hamdani, Sharon Hannes, Marcel Kahan, Ehud Kamar, Louis Kaplow, Kobi Kastiel, Tami Kricheli-Katz, Travis Laster, Michael Livermore, Justin McCrary, Paul Mahoney, Ira Millstein, Josh Mitts, John Monahan, Dotan Oliar, Ariel Porat, Mark Roe, Steve Shavell, Kathy Spier, Leo Strine, and participants at the Harvard Law School Law & Economics Workshop, Columbia Law School's Millstein Center & Gibson Dunn Round Table, NYU/TAU Corporate Conference, Fordham Law School Faculty Workshop, Harvard Law School Law & Economics Workshop, Hebrew University Law & Economics Workshop, UVA Law School faculty workshop, and the annual meeting of the American Law & Economics Association for helpful comments and suggestions. All errors are ours.

psychology now provides sound reasons to conclude that corporate managers often fall prey to long-term bias—excessive optimism about their own long-term projects. We illustrate several plausible instantiations of such biases using case studies from three prominent companies where managers have arguably succumbed to a form of "long-termism" in their own corporate stewardship. Unchecked, long-termism can impose substantial costs on investors that are every bit as damaging as short-termism. Moreover, we argue that long-term managerial bias sheds considerable light on the paradox of why short-termism evidently persists among supposedly sophisticated financial market participants: shareholder activism—even if unambiguously myopic—can provide a symbiotic counter-ballast against managerial long-termism. Without a more definitive understanding of the interaction between short- and long-term biases, then, policymakers should be cautious about embracing reforms that focus solely on half of the problem.

> *"[H]ere we are . . . [w]hen you look at what has happened, what did you do wrong? I think that—well, one, I don't think the story has yet played out. . . . A lot of tech turnaround adds we do take five, six, seven years . . . ."*[1]
>
> Marissa Mayer, March 10, 2016

> *"My opinion is that, philosophically, I'm doing the right thing in trying to shake up some of these managements. It's a problem in America today that we are not nearly as productive as we should be."*[2]
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> Carl Icahn, October 22, 2014

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[1] *See* Kara Swisher, *Marissa Mayer Says Marissa Mayer 'Would Love to Be Running Yahoo' Next Year*, RECODE (Mar. 10, 2016), https://www.vox.com/2016/3/10/11586886/marissa-mayer-says-marissa-mayer-would-love-to-be-running-yahoo-next [https://perma.cc/SUR4-U9VZ].

[2] James Chen, *Icahn Lift*, INVESTOPEDIA (June 25, 2019), https://www.investopedia.com/terms/i/icahn-lift.asp [https://perma.cc/9YA5-WMQH].

I. INTRODUCTION

The perceived dangers of "short-termism" in public capital markets have come to occupy center stage as a chief concern for corporate America. During the last decade, an emerging conventional wisdom has taken root among lawyers, business commentators, judges, policymakers and (at least some) investors, asserting that managers of public companies are all too often pressured to pursue short-term gains at the expense of managing for long-term value.

Although concerns about short-termism in capital markets are hardly new[3] (ebbing and flowing for over a quarter century[4]), the recent rise of hedge fund activism and corporate governance intermediation has added a sense of urgency—if not emergency—to the critical chorus warning of the perils of myopia. Leo Strine, the former Chief Justice of the Delaware Supreme Court, has cautioned that "there is a danger that activist stockholders will make proposals motivated by interests other than maximizing the long-term, sustainable profitability of the corporation."[5] Martin Lipton, a patriarch of company-side mergers and acquisitions, echoes these concerns, issuing stern rebukes to activists who, he argues, "are preying

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[3] As far back as 1980, a provocative and influential article in the Harvard Business Review predicted that corporate management's "devotion to short-term returns and 'management by the numbers'" was bringing about a "decline in competitiveness of U.S. companies." Robert H. Hayes & William J. Abernathy, *Managing Our Way to Economic Decline*, 58 HARV. BUS. REV. 67, 70, 77 (1980).

[4] *See, e.g.*, Kevin J. Laverty, *Economic "Short-Termism": The Debate, the Unresolved Issues, and the Implications for Management Practice and Research*, 21 ACAD. MGMT. REV. 825 (1996).

[5] Leo E. Strine, Jr., *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. L. 1, 8 (2010) [hereinafter Strine, *Fundamental Question*]; *see also* Leo E. Strine, Jr., *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, 1885 (2017) [hereinafter Strine, *Who Bleeds*] ("[H]uman investors are exposed to . . . changes in corporate behavior influenced by stock market forces such as hedge fund activism: a short-term increase in productivity and stock price at the expense of long-term reinvestment and wage growth will likely harm the overall 'portfolio' of the human investor.").

on American corporations to create short-term increases in the market price of their stock at the expense of long-term value."[6] "This pervasive short-termism," Lipton cautions, "is eroding the overall economy and putting our nation at a major competitive disadvantage . . . ."[7]

Much of the ensuing debate about short-termism has tended to revolve around competing claims concerning the phenomenon in isolation. Many skeptics of the "short-termism" critique, for example, have rejoined that arbitrage activity in efficient capital markets should be a natural corrective mechanism that eviscerates (or substantially dampens) most of the alleged short-term biases.[8] Others have questioned the magnitude of the phenomenon,[9] or argued that claims about short-termism are little more than a disingenuous smokescreen for managerial agency costs and empire building.[10] Nevertheless, manifest concerns about the perils of

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[6] Martin Lipton, *Important Questions About Activist Hedge Funds*, HARV. L. SCH. F. CORP. GOVERNANCE & FIN. REG. (Mar. 9, 2013), https://corpgov.law.harvard.edu/2013/03/09/important-questions-about-activist-hedge-funds/ [https://perma.cc/YYQ4-JMEC].

[7] Martin Lipton, *Some Thoughts for Board of Directors in 2017*, HARV. L. SCH. F. CORP. GOVERNANCE & FIN. REG. (Dec. 8, 2016), https://corpgov.law.harvard.edu/2016/12/08/some-thoughts-for-boards-of-directors-in-2017/ [https://perma.cc/BH9K-YK96].

[8] *See e.g.*, Mark J. Roe, *Corporate Short-Termism—In the Boardroom and in the Courtroom*, 68 BUS. L. 977, 987 (2013) ("If short-term stock market pressures are inducing firms to give up value over the long run, then firms and markets would find themselves with incentives to develop institutions and mechanisms to facilitate that long-run profitability."); Jonathan Macey, *Their Bark is Bigger Than Their Bite: An Essay on Who Bleeds When the Wolves Bite*, 126 YALE L.J. F. 526, 535 (2017) ("The efficient capital market hypothesis implies that it is virtually impossible for an activist hedge fund to outperform the market without illegally using material inside information unless they improve corporate performance.").

[9] *See, e.g.*, Steven N. Kaplan, *Are U.S. Companies Too Short-Term Oriented? Some Thoughts* (Nat'l Bureau of Econ. Research, Working Paper No. 23464, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2980552 [https://perma.cc/5ZEX-GVK4] (despite ongoing short-termism concerns that "corporate profits are near all-time highs").

[10] *See, e.g.*, Lucian A. Bebchuk et al., *The Long-Term Effects of Hedge Fund Activism*, 115 COLUM. L. REV. 1085, 1136 (2015). *But see* John C. Coffee, Jr. & Darius Palia, *The Wolf at the Door: The Impact of Hedge Fund*

short-termism—and the existential threat it supposedly poses for long-term value creation—continue to dominate both the public discourse[11] and some influential corners of academic research.[12] And a host of legal and regulatory reforms to discourage short-termism and encourage management for the long term are currently on the table at both state and federal levels, eliciting considerable debate themselves.[13] At present, the

Activism on Corporate Governance, 41 J. CORP. L. 545, 550 (2016) ("We think this assumption that managements typically engage in inefficient empire building is out of date today and ignores the impact of major changes in executive compensation."). For a broader discussion *see infra* Section IV.B.1.

11 The *Harvard Business Review* recently published an Article confirming that "Yes, Short-Termism Really is a Problem," and dedicated a whole issue to "Managing for the Long-Term." *See* Roger L. Martin, *Yes, Short-Termism Really is a Problem*, HARV. BUS. REV. (Oct. 9, 2015), https://hbr.org/2015/10/yes-short-termism-really-is-a-problem [https://perma.cc/8Y9H-3AY6]; *Managing for the Long Term*, HARV. BUS. REV., May–June 2017.

12 *See, e.g.*, Coffee & Palia, *supra* note 10, at 574–76 (surveying studies that find that hedge fund activism is associated with a decline in R&D investment); *see also* Nickolay Gantchev et al., *Governance under the Gun: Spillover Effects of Hedge Fund Activism* (European Corp. Governance Inst., Working Paper No. 562/2018), http://ssrn.com/abstract=2356544 [https://perma.cc/Z2X4-CPDR] (finding that activism also affects firms that were not directly targeted). *Cf.* Alon Brav et al., *How Does Hedge Fund Activism Reshape Corporate Innovation?*, 130 J. FIN. ECON. 237 (2018) [hereinafter, Brav et al., *Innovation*] (finding that target firms decrease investment in R&D but improve innovation output measured in patent counts and citations); Alon Brav et al., *The Real Effects of Hedge Fund Activism: Productivity, Asset Allocation, and Labor Outcomes*, 28 REV. FIN. STUD. 2723 (2015) [hereinafter Brav et al., *Real Effects*] (finding that target firms improve operational and allocative efficiency). John R. Graham et al., *The Economic Implications of Corporate Financial Reporting*, 40 J. ACCT. & ECON. 3, 47–50 (2005) (in a 2003 survey of 401 CFOs, most participants reported that short-term pressures might lead their firms to forgo valuable long-term investments); Dominic Barton et al., *Rising to the Challenge of Short-Termism*, FCLT GLOBAL 5–7 (2016), http://www.fcltglobal.org/docs/default-source/default-document-library/fclt-global-rising-to-the-challenge.pdf [http://perma.cc/7Z8P-QPJJ] (a 2015 survey of more than 1,000 top executives reveals that executives and board members believe that growing short-term pressures result in too short investment time horizons).

13 For example, the proposed Brokaw Act would "fight against increasing short-termism in our economy by promoting transparency and strengthening oversight of activist hedge funds." Press Release, Sen. Tammy

kerfuffle over short-termism has attracted passionate participants on both sides, with the resulting battlefield resembling something close to a standoff.

The ongoing stalemate might be due (at least in part) to the failure of advocates from both sides to confront seriously two curious paradoxes within their own debate. First, even if episodic short-termism might conceivably emerge in specific capital market settings, its persistence over time seems difficult to explain. Why would sophisticated market participants, for example, deliberately and repeatedly leave money on the table during both economic upturns and downturns, eschewing superior long-term investments in order to extract a quick payout?[14] The conventional response that hedge fund managers are incentivized through compensation towards short-termism rings particularly hollow. Despite its current predominance, nothing requires the persistence of standard "two and twenty" compensation package; and yet, hedge funds have generally not backed away from it (if anything, migrating to

Baldwin, U.S. Senator Tammy Baldwin Introduces Bipartisan Legislation to Strengthen Oversight of Predatory Hedge Funds, (Aug. 31, 2017), https://www.baldwin.senate.gov/press-releases/brokaw-act2017 [https://perma.cc/THJ9-NW3T]; *see also* Brokaw Act, S. 1744, 115th Cong. (2017). Similarly, proposals to eliminate quarterly reporting requirements are winning prominent champions. *See, e.g.*, Martin Lipton, *The New Paradigm for Corporate Governance*, HARV. L. SCH. F. CORP. GOVERNANCE & FIN. REG. (Feb. 3, 2016) [hereinafter Lipton, *New Paradigm*], https://corpgov.law.harvard.edu/2016/02/03/the-new-paradigm-for-corporate-governance/ [https://perma.cc/PYN7-V7Y7] (arguing against the need for quarterly reporting requirements); *see also* Strine, *Who Bleeds, supra* note 5, at 1956–69 (proposing an array of policy responses to combat short-termism, such as curbing shareholders' proposal mechanisms). Delaware courts have many times clarified directors' fiduciary duties must align with value creation under a long-term horizon. *See In re* Trados Inc. S'holder Litig., 73 A.3d 17, 37 (Del. Ch. 2013) ("[T]he duty of loyalty therefore mandates that directors maximize the value of the corporation over the long-term . . . ."); *In re* Rural/Metro Corp. Stockholders Litig., 102 A.3d 205, 253 (Del. Ch. 2014); *In re* PLX Tech., Inc. Stockholders Litig., No. 9880-VCL, 2018 WL 5018535, at *41 (Del. Ch. Oct. 16, 2018); J. Travis Laster & John Mark Zeberkiewicz, *The Rights and Duties of Blockholder Directors*, 70 BUS. LAW. 33, 49 (2014) ("The directors' fiduciary duties . . . require that they maximize the value of the corporation over the long term . . . .").

[14] *See, e.g.*, Roe, *supra* note 8, at 987–89.

even more short-term-oriented remuneration[15]). The strong and positive market response to hedge fund activism announcements (with largely equivocal evidence about long-term effects) similarly belies the notion of short-termism as an artifact of market pathology.[16]

The second puzzling aspect of the current debate concerns the concept of long-term value creation itself, and its seemingly deified status as the consensus gold standard for corporate governance. In other words, while the clash over the existence and/or magnitude of short-term bias has raged on, most have been willing to stipulate that long-term value maximization remains a paragon objective (quibbling only about how best to realize it).[17] It appears conventional for both sides of the debate to characterize (or at least presume) long-term

[15] Traditionally, hedge fund managers only charge a fee of 2% of the assets they manage (called a "management fee") and 20% on annual appreciation, a factor said to incentivize short-term returns (called a "performance fee"). Recently, however, these 2% and 20% figures have migrated to 1.5% and 20%—i.e., an even smaller reward on assets, and a relatively larger reward on annual, short-term, appreciation. *See* Lindsay Fortado, *Hedge Fund Investors Question '2 and 20' Fees,* FIN. TIMES (June 6, 2017), https://www.ft.com/content/291081ba-49df-11e7-a3f4-c742b9791d43 [https://perma.cc/P84S-7432].

[16] *See* Alon Brav et al., *Hedge Fund Activism, Corporate Governance, and Firm Performance* 63 J. FIN. 1729 (2008) [hereinafter, Brav et al., *Firm Performance*]; *see also* Bebchuk et al., *supra* note 10 (finding that the initial increase in value does not fade within five years). *Cf.* K.J. Martijn Cremers et al., Hedge Fund Activism, Firm Valuation and Stock Returns (Dec. 19, 2018) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2693231 [https://perma.cc/8PFL-CVFW] (reporting that targeted firms performed less well in the long-term than a matched sample of non-targeted firms).

[17] *See, e.g.*, Strine, *Fundamental Question*, *supra* note 5, at 4–8 (describing the debate in the literature). Even many short-termist hedge fund activists often see themselves as taking steps to reshape firms' long-term strategies. Many activists, for example, hold shares for several years, fight to nominate board members, establish long term strategy committees, and reshape long-term operational plans. See *infra* notes 75–79 and accompanying text.

decision making as largely unbiased,[18] even as concerns over short-termist positions sharpen.

In this Article, we attempt to gain some traction on several of the above quandaries by introducing a novel notion of *long-term bias*: namely, an inclination for managers to favor inferior long-term projects over short-term alternatives that have superior returns. While short-term bias originates primarily from external sources such as capital market investors, long-term bias emerges internally, from managers' assessments about their own long-term projects. Long-term bias, we argue, is likely to be especially salient for managerial decision makers, because (1) managers are inclined to be highly optimistic in general; (2) they tend to discount feedback and relevant data; and (3) they tend to receive such feedback more sporadically for long-term endeavors. Consequently, we argue, mangers' long-term projects are particularly prone to persistent overestimation.

Optimism bias—the proclivity of corporate managers to overestimate the success probability of their own projects—has already been documented extensively in the economics and finance literature.[19] But we distill a stronger implication yet from this literature: that optimism bias is likely to be amplified, less constrained, and more influential with respect to

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[18] For example, while a Google Scholar search for "short-term bias" & "corporate law" yields around 100 results, a Google Scholar search for "long-term bias" & "corporate law" yields 11 results, none of which is relevant to corporate investment, or to the long-term bias that we discuss here. Indeed, long-termism has long been the darling of corporate practice and policy, frequently equated with efficiency and growth. *See e.g.*, Strine, *Fundamental Question*, *supra* note 5, at 3 (citing sources, and stating that "[t]o build wealth in a durable manner, corporations need to commit capital to long-term endeavors, often involving a lag time between the investment of capital and the achievement of profit, a long time during which activities like research and development occur" (citation omitted)); William T. Allen, *Ambiguity in Corporation Law*, 22 DEL. J. CORP. L. 893, 896–97 (1997) ("[I]t can be seen that the proper orientation of corporation law is the *protection of long-term value of capital* committed indefinitely to the firm."); Gantler v. Stephens, 965 A.2d 695, 706 (Del. 2009) ("[A] board's decision . . . is often rooted in distinctively corporate concerns, such as enhancing the corporation's long term share value . . . .").

[19] *See infra* Section III.A (summarizing the literature).

long-term investments. Thus, while managerial overconfidence may affect all investments initially, it will over time lead to a disproportional survivorship of long-term investments—and hence, to an overall long-term bias in the aggregate. Our analysis of how and why long-term investments are systematically prone to overestimation draws primarily on extensive literatures in psychology and behavioral finance, but we also buttress it with three extended case studies from mainstream companies (Yahoo, AOL and Navistar), where managerial overconfidence about long-term investments appears to have thrived, only to be disrupted by hedge fund activism.

Our analytic arguments and case studies help elucidate several factors that make long-term projects especially susceptible to overconfidence. Foremost, due to their longer trajectories, long-term investments are frequently volatile—they could result in either an extremely high upside or an extremely low downside. An optimistic manager who overestimates the likelihood of achieving success is particularly prone to miscalculating value in a long-term (and thus more volatile) investment.[20] We argue that amplified managerial optimism plausibly played a role in the hiring of Marissa Mayer as Yahoo's CEO. Mayer lacked relevant experience to lead a company of Yahoo's size and had an inconsistent trajectory at Google (which included a recent demotion).[21] Yahoo's board was nonetheless won over by her ambitious long-term plan to

[20] To illustrate, assume two similar investments, a short-term investment ("ST") that could produce either 200 or 320, each with 50% probability, and a long-term investment ("LT"), that involves higher uncertainty (high upside and low downside) and hence could produce either 0 or 500, each with 50% probability. ST has a higher expected value than LT (260 relative to 250). Now assume that for each of these investments, an overconfident manager overestimates the probability of a good scenario to be 60% (and accordingly underestimates the probability of a bad scenario to be 40%). For the overconfident manager the LT investment has a higher expected value than the ST investment (300 relative to 272). The overconfident manager thus would exhibit a long-term bias, preferring an objectively inferior LT investment to a superior ST one. For a broader discussion *see infra* Section III.A.2.

[21] *See* NICHOLAS CARLSON, MARISSA MAYER AND THE FIGHT TO SAVE YAHOO! 174–75, 237–38 (2015).

make Yahoo competitive with Facebook and Google in a still emerging and unpredictable market.[22] Yet, with variability that large, this Article argues that even moderate optimism on the board's part could have led to a significant overestimation of Mayer's plan for Yahoo.

Our case studies also help demonstrate how other factors contributing to overconfidence are likely to be especially salient for long-horizon ventures. One important force exacerbating overconfidence—the so-called "illusion of control"—manifests when there is a long temporal "onramp" to strategize, act, and overcome impediments.[23] For example, Dan Ustian (the then-CEO of Navistar) was so committed to perfecting an unproven technology for complying with new environmental standards that he neglected to develop a backup plan, even as his favored technology began to show definitive signs of falling short.[24] In addition, in Mayer's sole interview after Yahoo's failure, she doubled down on her belief that the only thing that was missing was time—if she had a few more years, she reasoned, could have successfully righted Yahoo's listing ship.[25] Another factor contributing to overconfidence—the tendency to neglect potential downstream competition—is also

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[22] Accordingly, the Yahoo board viewed the less risky plan proposed by Yahoo's internal candidate, Ross Levinsohn, as short-sighted. *See infra* notes 202–05 and accompanying text.

[23] *See, e.g.*, Ellen J. Langer, *The Illusion of Control*, 32 J. PERSONALITY & SOC. PSYCHOL. 311, 320–21 (1975) (participants who had more time to think about actions and strategies demonstrated higher overconfidence on their chances to win a lottery). For a broader discussion see *infra* Section III.A.3.

[24] *See inf*ra notes 270–71 and accompanying text.

[25] *See, e.g.*, Diana Goovaerts, *Mayer's Three-Year Plan to Turn Yahoo into a Mobile Hitter*, EE WORLD ONLINE (Mar. 15, 2016), http://www.ecnmag.com/mayers-three-year-plan-to-turn-yahoo-into-a-mobile-hitter/ [https://perma.cc/E5GD-SH6K] ("'I don't think the story has yet played out,' Mayer said. 'I think that when we look at this, we've rolled out a new strategic plan for the company, and we can see the turnaround. A lot of tech turnarounds do take five, six, seven years.'"); Douglas MacMillan, *Marissa Mayer Wants Three More Years to Turn Around Yahoo*, WALL ST. J. (Mar. 11, 2016), https://blogs.wsj.com/digits/2016/03/11/marissa-mayer-wants-three-more-years-to-turn-around-yahoo/ [https://perma.cc/XK3B-D3T6].

especially salient with respect to long-term investments, as long-term competition is hard to predict when the initial project is inevitably vague.[26] Mayer's long-term plan for Yahoo, for instance, which was focused on creating different apps—most notably a search app—relied on Mayer's skills, experience, and success while neglecting to predict how competitive the market for apps would become.[27]

Finally, certain factors that ordinarily help restrain and/or discipline overconfident managers—frequent benchmarking exercises and interim feedback—are mechanically less routine for long-gestation projects. Benchmarking to a reference class of projects is less likely for long-term projects, since managers typically view their own ideas as utterly unique.[28] When the finish line is far off on the horizon, regular and probative feedback is rarely conspicuous, sporadic in arriving,[29] and often too late for a manager who is prohibitively invested in the long-term project.[30] When problems arose with Navistar's ambitious Exhaust Gas Recirculation ("EGR") technology, for example, CEO Ustian practically quarantined his office away from company engineers and dismissed employees who were

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[26] On the relationship of vagueness to overconfidence see *infra* Section III.B.1.

[27] *See* CARLSON, *supra* note 21, at 285–86, 305.

[28] For the importance of using a reference class to restrain overconfidence, see Daniel Kahneman & Amos Tversky, *Intuitive Prediction: Biases and Corrective Procedures*, *in* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES, 414 (Daniel Kahneman et al. eds., 1982) [hereinafter Kahneman & Tversky, *Intuitive Prediction*]; Dan Lovallo & Daniel Kahneman, *Delusions of Success: How Optimism Undermines Executives' Decisions*, HARV. BUS. REV., July 2003, at 56 [hereinafter Lovallo & Kahneman, *Delusions*]; DANIEL KAHNEMAN, THINKING, FAST AND SLOW 245–254 (2011) [hereinafter KAHNEMAN, THINKING]. For a broader discussion of restrains to overconfidence in long-term projects see *infra* Section III.B.

[29] *See*, *e.g.*, Phebo D. Wibbens & Nicolaj Siggelkow, *Introducing LIVA to Measure Long-Term Firm Performance*, STRATEGIC MGMT. J. 1 (2020) (developing a long-term investment performance measure that is defined only *ex post*).

[30] *See, e.g.*, Tali Sharot et al., *How Unrealistic Optimism is Maintained in the Face of Reality*, 14 NATURE NEUROSCIENCE 1475, 1475–78 (2011) (finding asymmetric updating of beliefs in light of new information); Ziva Kunda, *The Case for Motivated Reasoning*, 108 PSYCHOL. BULL. 480 (1990) (arguing that motivation affects reasoning).

vocally skeptical.[31] And in "probably the most intense moment you'll ever hear during a workplace conference call," Tim Armstrong, AOL's CEO (who eventually had to cut bait on his own long-term project called Patch), impulsively fired an employee in front of the entire division.[32] In a recent retrospective interview, Armstrong identified his coddling of Patch as his main misstep at AOL, laying particular blame on his pattern of ignoring incoming feedback and data about the project.[33]

To the extent that our account of long-term managerial bias is persuasive, it holds several implications for corporate law and policy. First, it suggests managers are, if left to their own devices, inclined to overinvest in long-term projects. As a result, external short-term pressures may have some positive ramifications.[34] Activist hedge funds no doubt emphasize (and may even overemphasize) short-term performance, resulting in excess demand for immediate payouts. But irrespective of

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[31] *See* discussion *infra* Section III.C.3.

[32] Nicholas Carlson, *LEAKED AUDIO: Listen to AOL CEO Tim Armstrong Fire a Patch Employee in Front of 1,000 Coworkers*, BUS. INSIDER (Aug. 12, 2013), http://www.businessinsider.com/leaked-audio-listen-to-aol-ceo-tim-armstrong-fire-a-patch-employee-snapping-a-photo-2013-8 [https://perma.cc/AJ5X-LGPB].

[33] Recode Staff, *Full Transcript: Oath CEO Tim Armstrong on Recode Media*, RECODE (Sept. 3, 2017), https://www.recode.net/2017/9/3/16243970/transcript-oath-ceo-tim-armstrong-aol-patch-verizon-yahoo-recode-media [https://perma.cc/ME86-MWP5] ("The judgment changed and the mistake I made was going exactly what you said, too bullish down a path without making sure those early positive metrics were actually coming true in all the other markets.").

[34] So far, the conventional wisdom has dismissed arguments of overinvestments. Empire building, an agency-costs theory of overinvestment, was considered dated, since equity compensation packages better aligned managers' incentives with firm value. *See* Coffee & Palia, *supra* note 10, at 593–94. Overconfidence drives the long-termist approach. Therefore, incentive-based compensation encourages rather than discourages it. Overconfident managers who genuinely but mistakenly believe in the desirability of these investments, are encouraged to invest more if their compensation is tied to firm value. *See, e.g.*, Ulrike Malmendier & Geoffrey Tate, *CEO Overconfidence and Corporate Investment*, 60 J. FIN. 2661, 2696 (2005) [hereinafter, Malmendier & Tate, *Investment*] ("Specifically, standard incentives such as stock- and option-based compensation are unlikely to mitigate the detrimental effects of managerial overconfidence.").

motivation, such short-termism may represent an efficient counter-ballast against at least certain forms of long-termist overinvestment.

Second, short-term pressure to unlock cash may increase the frequency of external feedback and benchmarking for overconfident managers, since it requires them to draw more regularly on external sources to finance their projects. It is well known that overconfidence tends to feed on a surplus of internal funds (e.g., retained earnings) to underwrite projects.[35] If overconfident managers are required to raise capital externally (because activists keep capital margins thin), they will have to "pitch" (and "re-pitch") their ideas more frequently to outside capital providers.[36]

Third, our analysis bears on ongoing reform proposals to re-shape doctrines, laws and regulations in order to protect long-termist management from short-term demands. The Brokaw Act, for example, which would constrain hedge fund activists through a variety of disclosure and liability measures, was reintroduced on August 31, 2017.[37] Several

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[35] *See* Malmendier & Tate, *Investment*, *supra* note 34, at 2661, 2663 (finding that overconfident CEOs "overinvest when they have abundant internal funds, but curtail investment when they require external financing" and that this "sensitivity of investment to cash flow is strongest for CEOs of equity-dependent firms, for whom perceived financing constraints are most binding"); Ulrike Malmendier & Geoffrey Tate, *Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction*, 89 J. FIN. ECON. 20, 20 (2008) [hereinafter Malmendier & Tate, *Acquisitions*] (finding that overconfident CEOs are likely to make value destroying acquisitions, and the effect is stronger "if they have access to internal financing"). In addition, in all the three case studies that this Article discusses—namely, Yahoo, AOL & Navistar—the firms were generating significant cash flow, which was used to finance the long-term investments discussed. *See* discussion *infra* Section III.C.

[36] Indeed, a recent study finds that new equity issues wash out half of firms' payouts to shareholders. *See* Jesse M. Fried & Charles C.Y. Wang, *Short-Termism and Capital Flows*, 8 REV. CORP. FIN. STUD. 207, 217–19 (2019). *See also* Bebchuk et al., *supra* note 10, at 1136 (arguing that in the absence of short-term pressures "management might refrain from taking actions that would reduce the size of the empire under its control or the freedom to pursue projects without the discipline generated by having to raise outside financing").

[37] *See* Brokaw Act, S. 1744, 115th Cong. (2017).

opponents of hedge fund activism have also called for elimination of quarterly reporting requirements (generating recent presidential and regulatory attention).[38] And, several recent decisions by Delaware courts have held that a director nominee of a short-term investor or hedge find might breach their fiduciary duties by pursuing strategies that appear to disregard the firm's long-term equity value.[39] Our analysis counsels some degree of caution in pursuing these legal and regulatory interventions that are predicated largely on insulating corporate decision making from the forces short-termism. If such interventions do not account for the possibility of value-reducing long-termism too, the results could miss their mark by a wide margin.[40]

Fourth, our analysis has implications for takeover law, such as Delaware's well-known approach that permits managers to "just say no" to a hostile acquirer. As students of corporate law are well aware, public company managers frequently tend to spurn unsolicited acquisition offers (purportedly made by short-termist corporate raiders), asserting that the premium offered (frequently 30% to 50% above the prevailing market price)[41] undershoots the "real" fundamental value of the company's long-term prospects.[42] Delaware courts accord considerable deference to such resistance,

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[38] *See, e.g.*, Lipton, *New Paradigm*, *supra* note 13 (calling for the elimination of quarterly reporting requirements).

[39] *See In re* Trados Inc. S'holder Litig., 73 A.3d 17, 37 (Del. Ch. 2013); *In re* Rural/Metro Corp. Stockholders Litig., 102 A.3d 205, 253 (Del. Ch. 2014); *In re* PLX Tech. Inc. Stockholders Litig., No. 9880-VCL, 2018 WL 5018535, at *41 (Del. Ch. Oct. 16, 2018).

[40] We note that thus far, the Delaware courts appear to be exercising this caution implicitly. In the recent *Trados* and *PLX* decisions, for example, Vice Chancellor Laster held that hedge fund nominee directors violated their fiduciary duties by engineering early exits, but the court then also determined the damages to be effectively zero. *See In re Trados Inc.*, 73 A.3d at 56–58, 78; *In re PLX Tech. Inc.*, 2018 WL 5018535, at *38–47, *50–56.

[41] Stefano Rossi & Paolo F. Volpin, *Cross-Country Determinants of Mergers and Acquisitions*, 74 J. FIN. ECON. 277, 282 tbl.2 (2004).

[42] *See* Nitzan Shilon, *Putting Directors' Money Where Their Mouths Are: A New Approach to Improving Corporate Takeover Dynamics*, 2017 COLUM. BUS. L. REV. 511, 536, 542–47 (2017).

maintaining that so long as the target board's assessment is genuine and informed, it enjoys wide latitude to stiff-arm an outside bid.[43] If, however, managerial assessments of long-term value are biased, judicial deference may not always be categorically justified.

Finally, our argument also has implications for assessing the new phenomenon of dual-class IPOs.[44] Despite a potential discount to the IPO price, overconfident managers, who believe that the market is likely to undervalue their long-term project, may embrace a dual-class structure to protect their projects from subsequent shareholder revolts.[45] While our strong intuition is to leave such capital-structure decisions up to the promoters (who must internalize the discount, after all), long-termism may well imply that at least some fraction of dual-class structures are unwise or inefficient.[46]

We flag three important caveats to our analysis before proceeding. First, much of our constructive argument marshals insights and findings from behavioral finance and psychology, positing how certain non-rational biases may distort managerial decision making. We are mindful that behavioral approaches may not be appropriate in all circumstances, and—when used too immodestly—fall prey to the vice of explaining too much (providing a metaphorical Swiss Army knife of biases that can rationalize almost anything).[47] That said, behavioral arguments seem particularly apt in assessing the instant

[43] *See* Paramount Commc'ns, Inc. v. Time Inc., 571 A.2d 1140, 1154–55 (Del. 1989).

[44] *See* discussion *infra* Section IV.C.1.

[45] *Cf.* Zohar Goshen & Assaf Hamdani, *Corporate Control and Idiosyncratic Vision*, 125 YALE L.J. 560 (2016) (arguing that founders sometimes rightly maintain control in order to pursue value enhancing investments with idiosyncratic vision).

[46] At the same time, we do not rule out the possibility that in some cases this manager rightly believes in her long-term project, while activists mistakenly undervalue her unique vision. *See id.* at 565–67 (arguing that investors might undervalue, and even frustrate, idiosyncratic, value enhancing investments).

[47] *See, e.g.*, Richard Posner, *Rational Choice, Behavioral Economics, and the Law*, 50 STAN. L. REV. 1551, 1560 (1998); Ryan Bubb & Richard H. Pildes, *How Behavioral Economics Trims Its Sails and Why*, 127 HARV. L. REV. 1593, 1633 (2014).

debate, since many (if not most) coherent criticisms of short-termism similarly draw on behavioral theories, rejecting an assumption of perfectly rational capital markets. Our contribution, then, is not as much to introduce behavioral theory into the debate as it is to point out its relevance on both sides.

Second, while our focus here is on making the case that long-term bias exists and distorts corporate decision making, we do not aspire to displace or refute the prevailing narrative about the dangers of short-term bias. Quite to the contrary, a key puzzle surrounding short-termism—its stubborn persistence over time—becomes far less paradoxical when short-termism is viewed as an institutional "chaperone" to long-termism.[48] Because the two biases affect managers in opposing directions, they can tend to counteract one another's most glaring shortcomings. Once one relaxes utopian assumptions about the sacrosanctity of long-term value, persistent and durable short-termism among sophisticated investors becomes both more plausible and symbiotic. Viewed this way, long-term bias plays the yin to short-termism's yang.[49]

Finally, even if one accepts our constructive argument, it concededly comes straight out of the "shareholder primacy" handbook, equating firm welfare to shareholder value. While this normative frame is well established in doctrine, the relative merits of long-term versus short-term management could easily change when reckoned against alternative desiderata. One important and re-emerging dialogue within corporate law concerns the extent to which managers do (or should) give decisional weight to a broader set of constituencies beyond stockholders. Creditors, employees, customers, suppliers, and surrounding communities may also have a stake in company decisions, yet are rarely accorded the same primacy under corporate law that shareholders receive. And, it seems plausible

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[48] *See* Michal Barzuza & Eric Talley, *Short-Termism and Long-Termism* 21–41 (Columbia Law and Econ. Working Paper No. 526, 2016), http://ssrn.com/abstract=2731814 [https://perma.cc/GT7H-U4RD] (modeling short-term bias' interactions with long-term bias).

[49] For an analysis of the relationship between biases' costs and biases' survivorship over time see Xavier Gabaix, *A Sparsity-Based Model of Bounded Rationality*, 129 Q. J. ECON. 1661 (2014).

that many overconfident long-term strategies also might bestow collateral benefits on non-shareholder constituencies (e.g., aggressive R&D programs that increase the company's workforce).[50] Thus, even if our arguments are correct, long-term value maximization could still emerge attractive precisely because it endows managers with the equanimity to pursue strategies that are both overconfidently sanguine and stakeholder friendly. While we welcome this dialogue, we also submit that long-term biases may afflict managerial judgment with respect to other stakeholders, further multiplying this effect. Moreover, a host of alternative mechanisms already exist for ensuring stakeholder-friendly governance, including public benefit corporate structures,[51] alternative financing arrangements,[52] tax incentives,[53] and top-down regulation.[54] Some of these alternatives could well outflank managerial long-termism in harmonizing the interests of multiple stakeholders. At the very least, these comparisons deserve to be made transparently, and upon equal footing.

Our analysis unfolds as follows. Part II discusses the current debate surrounding short-termism, along with its curious

[50] *See* Coffee & Palia, *supra* note 10, at 47–54.

[51] *See* Jesse Finfrock & Eric Talley, *Social Entrepreneurship and Uncorporations*, 2014 U. ILL. L. REV. 1867, 1871–73 (2014).

[52] *See generally* Jeffrey D. Sachs et al., *Importance of Green Finance for Achieving Sustainable Development Goals and Energy Security, in* HANDBOOK OF GREEN FINANCE 8–11 (Jeffrey Sachs et al. eds., 2019).

[53] *See, e.g.*, Kee-Hong Bae et al., *Employee Treatment and Firm Leverage: A Test of the Stakeholder Theory of Capital Structure*, 100 J. FIN. ECON. 130 (2011) (finding a systematic relationship between corporate leverage and employee satisfaction, and positing that tax incentives that favor high leverage ratios may impair employee welfare).

[54] *See* Sen. Elizabeth Warren's proposed Accountable Capitalism Act, S. 3448, 115th Cong. (2018), which would federalize all U.S. corporations with over $1 billion in annual revenue, and mandate that not less than 40% of the directors of a U.S. corporation be elected by employees, requiring directors to consider the interests of all corporate stakeholders. Also note Sen. Chuck Schumer and Sen. Bernie Sanders' recent proposal to prohibit share buybacks unless a corporation has satisfied minimal employee wage and benefit requirements. *See* Chuck Schumer & Bernie Sanders, *Schumer and Sanders: Limit Corporate Stock Buybacks*, N.Y. TIMES (Feb. 3, 2019), https://www.nytimes.com/2019/02/03/opinion/chuck-schumer-bernie-sanders.html [https://perma.cc/H4KZ-J97X].

limitations. Sections III.A. & III.B. analyze the overconfidence literature and argue that based on experimental evidence, empirical data and theory, managerial overconfidence should lead to a long-term bias. Section III.C moves to discuss the three illustrative case studies—Yahoo, AOL & Navistar—where managers' overly rosy assessments of long-term projects were arguably interrupted by activist hedge funds. Part IV discusses the legal and business implications of our argument. Part V concludes.

II. SHORT-TERMISM: THE STANDARD (& PARADOXICAL) ACCOUNT

It takes little more than a glancing perusal of the business press to confirm that short-termism has become a defining *cause célèbre* of corporate America.[55] According to the conventional account,[56] managers of public companies face constant pressures—most notably from hedge fund activists—to meet quarterly earnings expectations, enhance liquidity, and pay out immediate returns, even if doing so sacrifices superior long-term investment opportunities and growth.[57] By appearance, such charges have some merit: as is well known, activists often pressure firms to increase dividend distribution and share repurchases, cut investments, and promote spinoffs and sales. Moreover, shortly after executing such strategies, activists frequently unwind their positions, leaving other shareholders behind to bear the long-term costs that their purportedly myopic strategies have wrought. Augmenting and backstopping activists' incentives, the argument goes, is hard

[55] *See supra* note 11 and accompanying text.

[56] As noted above, the popular business press has lamented short termism since at least the early 1980s, then usually in the guise of leveraged buyouts and corporate raiders. *See* Hayes & Abernathy, *supra* note 3, at 70. Here we confine description to the most recent incarnation of commentators' short termism criticisms.

[57] *See, e.g.*, CONFERENCE BD., IS SHORT-TERM BEHAVIOR JEOPARDIZING THE FUTURE PROSPERITY OF BUSINESS?, 1 (2015), https://www.wlrk.com/docs/IsShortTermBehaviorJeopardizingTheFutureProsperityOfBusiness_CEOStrategicImplications.pdf [https://perma.cc/6JKD-7WCP].

economics: the standard hedge fund manager's compensation structure—2% on assets, but a staggering 20% on the appreciation of their portfolio—provides a substantial reward for hitting a short-term home run, even as it eschews the less sexy (if still profitable) path of steady growth.[58] In addition, hedge funds investors typically are generally able to pull their money out of the fund within six months to two years, and they are known to threaten to do so whenever the fund manager cannot demonstrate short-term performance and gains.[59] Accordingly, several studies have shown that hedge funds can (and do) face significant liquidity crises through investor demands.[60] The resulting landscape overdetermines short-term bias, the argument goes, resulting in significant damage that includes a documented decline in firms' R&D investments and capital expenditures due to activist pressures.[61] Furthermore, the purportedly deleterious effects of activism reach far beyond the specific firms targeted—they easily "go viral" as other managers grope to implement short-termist strategies themselves, desperately hoping to preempt activism within their own ranks.[62] Adding to the pressure from activists, quarterly reporting requirements cast a frequent, mandatory, and often unflattering spotlight on short-term performance.[63] Management surveys confirm that perceived short-term

[58] *See, e.g.*, Strine, *Who Bleeds*, *supra* note 5, at 1893–94.

[59] *See id.* at 1893 ("A useful contrast is private equity's typical five- to ten-year lock-up."); Coffee & Palia, *supra* note 10, at 573.

[60] *See, e.g.*, Itzhak Ben-David et al., *Hedge Fund Stock Trading in the Financial Crisis of 2007-2009,* 25 REV. FIN. STUD. 1, 5 (2012) (finding that "following poor past performance, hedge fund investors withdraw almost three times more capital as do mutual fund investors").

[61] *See, e.g.*, Coffee & Palia, *supra* note 10, at 574–77 (surveying studies that find that hedge fund activism is associated with a decline in R&D investment); *but see* Brav et al., *Innovation*, *supra* note 12 (finding that target firms decrease investment in R&D but improve innovation output measured in patent counts and citations); Brav et al., *Real Effects*, *supra* note 12, at 2734–46 (finding that target firms improve operational and allocative efficiency).

[62] *See* Gantchev et al., *supra* note 12.

[63] *See, e.g.*, Lipton, *New Paradigm*, *supra* note 13.

pressures such as those described above have a significant limiting effect on long-term investments.[64]

The concern that short-term bias limits long-term investment and growth has become widespread, significant, and highly influential. Judges, policymakers, investors, lawyers, and managers, all share this concern and a sense of urgency to act to limit short-termism. In 2010, Judge Leo Strine, former Chief Justice of the Delaware Supreme Court, warned that "there is a danger that activist stockholders will make proposals motivated by interests other than maximizing the long-term, sustainable profitability of the corporation."[65] More recently, Strine reiterated that "changes in corporate behavior influenced by stock market forces such as hedge fund activism: a short-term increase in productivity and stock price at the expense of long-term reinvestment and wage growth will likely harm the overall 'portfolio' of the human investor."[66] Larry Fink, Chair and CEO of Blackrock—a significant investment fund—similarly stated that "[t]he effects of the short-termism phenomenon are troubling . . . more and more corporate leaders have responded with actions that can deliver immediate returns to shareholders, such as buybacks or dividend increases, while underinvesting in innovation, skilled workforces or essential capital expenditures necessary to sustain long-term growth."[67]

Similarly, the preeminent corporate lawyer Martin Lipton has been notably vocal about the risks of short-termism. In a recent publication Lipton argued that "[t]his pervasive short-termism is eroding the overall economy and putting our nation at a major competitive disadvantage."[68] Lipton has harsh

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[64] *See* Graham et al., *supra* note 12, at 47–50*;* Barton et al., *supra* note 12, at 6–9.

[65] Strine, *Fundamental Question*, *supra* note 5, at 8.

[66] Strine, *Who Bleeds*, *supra* note 5, at 1885.

[67] Letter from Laurence D. Fink, Chairman and Chief Exec. Officer, Blackrock, to Blackrock Shareholders (Mar. 31, 2015), http://www.shareholderforum.com/access/Library/20150331BlackRock.pdf. [https://perma.cc/2JRX-WZLZ].

[68] Lipton, *supra* note 7.

words for activists' "misuse of shareholder power,"[69] claiming it "can only be considered a form of extortion."[70] Similarly, the Conference Board, a leading business research organization, has warned about the risks of short-termism in a publication titled *Is Short-Term Behavior Jeopardizing the Future Prosperity of Business?*[71]

Amid this choir of prominent critics, a dissonant countermelody has emerged. Several commentators (including both academics and hedge funds) openly question the magnitude (and direction) of short-termism concerns along multiple fronts.[72] Some have argued, for example, that complaints about short-term bias are little more than a smoke screen for agency costs.[73] According to this argument, managerial empire building, inattentiveness, and internal diversification (all contrary to the interests of shareholders) may lead managers to keep their organizations too large, too diversified, and unnecessarily illiquid.[74] Moreover, several empirical studies have shown that activist interventions are associated with positive and significant market responses in stock prices of around 5% on average.[75] Such announcement returns would be consistent with long-term value destruction only if capital markets made significant and systematic errors in pricing securities by disregarding the longer term implications of activist intervention (a possibility that some entertain, at least episodically).[76] In addition, the average holding period for hedge fund activists appears to be close to two years (during which

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[69] Martin Lipton, *Bite the Apple*; *Poison the Apple*; *Paralyze the Company; Wreck the Economy*, HARV. L. SCH. F. CORP. GOVERNANCE & FIN. REG. (Feb. 26, 2013), http://corpgov.law.harvard.edu/2013/02/ 26/ bite-the-apple-poison-the-apple-paralyze-the-company-wreck-the-economy [https://perma.cc/B4HQ-BSNK].

[70] Lipton, *supra* note 6.

[71] CONFERENCE BD., *supra* note 57.

[72] *See*, *e.g.*, Kaplan, *supra* note 9.

[73] *See*, *e.g.*, Bebchuk et al., *supra* note 10, at 1136.

[74] *Id.*

[75] *See* Brav et al., *Firm Performance*, *supra* note 16, at 1756 (surveying these studies).

[76] *See* Roe, *supra* note 8, at 993–96.

they often have board representation)[77], seemingly at odds with the "quick round trip" narrative the conventional theory offers.[78] And, most modern activism appears intimately related to playing an ongoing role in governance through board seats, a phenomenon historically associated with "long-term" activism.[79]

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[77] *See* Ian D. Gow et al., *Activist Directors: Determinants and Consequences* (Harvard Bus. Sch., Working Paper No. 14-120, 2014).

[78] *See* Brav et al., *Firm Performance*, *supra* note 16, at 1748–49.

[79] In 2016, for example, activists targeted 79 companies, winning 145 board seats. *See* LAZARD, 2017 ACTIVISM YEAR IN REVIEW 5 (2018), https://www.lazard.com/media/450414/lazards-review-of-shareholder-activism-q4-2017pdf.pdf [https://perma.cc/DRQ8-5KWG]. The vast majority of these seats were won through settlements with the targeted board. *Id.* Their terms rarely contain explicit requirements to distribute capital, pay dividends, sell the company, replace the CEO, or any other specific demand that is typically attributed to hedge fund activism. *See* Alon Brav et al., *Dancing with Activists* 44 (Harvard John M. Olin Ctr. for Law, Econ., and Bus., Discussion Paper No. 906, 2019); John C. Coffee Jr. et al., *Activists Directors and Agency Costs: What Happens When an Activist Director Goes on the Board?*, 104 CORNELL L. REV. 381, 396–97 (2019).The Yahoo settlement, for example, required the establishment of a strategic committee. *See* Yahoo! Inc., Current Report (Form 8-K), exhibit 10.1 at 3–4 (Apr. 26, 2016), https://www.sec.gov/Archives/edgar/data/1011006/000119312516558861/d185516dex101.htm [https://perma.cc/A48R-W69C]. In the Darden/Olive Garden proxy fight, activist investor Starboard Value prepared a long and detailed report about the long table wait at restaurants and other suggested improvements. *See* STARBOARD VALUE, TRANSFORMING DARDEN RESTAURANTS 10 (2014), https://www.sec.gov/Archives/edgar/data/940944/000092189514002031/ex991dfan14a06297125_091114.pdf [https://perma.cc/6YSD-2TCD]. Similarly, the recent campaign of Nelson Peltz for a Proctor & Gamble board seat included significant proposals for operational improvements. *See* The Proctor & Gamble Co., Definitive Proxy Statement (Schedule 14A), at 1–2 (Aug. 16, 2017). Thus, the skeptics have rejoined, while there is no doubt that hedge fund intervention frequently is geared around extracting short-term value, there are examples where such interventions were also directed at improving the firm long-term strategy, operational changes, and managerial advice. *See* Strine, *Who Bleeds*, *supra* note 5, at 1908 ("[T]here is some emerging evidence suggesting that activist hedge funds prepared to take a long-term position and work as fiduciaries to improve the performance of the companies they target achieve a better market reaction."); *see also* C.N.V. Krishnan et al., *The Second Wave of*

The battle lines around activism and short-termism are now well established, and they have remained approximately stationary for roughly a decade. By our lights, the skirmish has devolved into something of a Remarquian standoff.[80] The lack of a definitive victor, however, has not diluted the impression among many prominent commentators that short-termism remains pervasive and threatening. Indeed, such concerns have become sufficiently influential that numerous reforms to discourage short-termism in order to protect and vindicate long term value are currently on the table. The proposed Brokaw Act, for example, "would fight against increasing short-termism in our economy by promoting transparency and strengthening oversight of activist hedge funds."[81] Similarly, within securities law there has been a growing movement afoot in recent years to relax and/or eliminate other potential sources of mandatory short-term benchmarking, such as the half-century-old requirement[82] of quarterly financial reporting.[83] These calls eventually spurred President Trump to order (well, to tweet, actually)[84] that the Securities and Exchange Commission (the "SEC") should investigate whether it should revert to semi-annual or annual reporting instead.[85]

Hedge Fund Activism: The Importance of Reputation, Clout, and Expertise, 40 J. CORP. FIN. 296 (2016).

[80] *See generally* ERICH MARIA REMARQUE, ALL QUIET ON THE WESTERN FRONT (A.W. Wheen, trans., Ballantine Publ'g Grp. 1982) (1928).

[81] *See* Sen. Tammy Baldwin, *supra* note 13; *see also* Brokaw Act, S. 1744, 115th Cong. (2017).

[82] *See* Form 10-Q For Disclosure of Financial Information,, Securities Exchange Act Release No. 34-8683, 35 Fed. Reg. 14,239, 14,239 (proposed Sept. 10, 1969) (to be codified at 17 C.F.R. pt. 249); Quarterly Reporting Form, Securities Exchange Act Release No. 34-9004, 35 Fed. Reg. 17,537, 17,537–38 (Oct. 28, 1970) (to be codified at 17 C.F.R. pt. 249).

[83] *See, e.g.*, Lipton, *New Paradigm*, *supra* note 13 (calling for the elimination of quarterly reporting requirements); *see also* Strine, *Who Bleeds*, *supra* note 5, at 1956–69 (proposing an array of policy responses, i.e., curbing shareholders' proposal mechanism).

[84] *See* Donald J. Trump (@realDonaldTrump), TWITTER (Aug. 17, 2018, 4:30 AM), https://twitter.com/realDonaldTrump/status/1030416679069777921 [https://perma.cc/AGJ6-7PNW].

[85] *See e.g.*, Dave Michaels et al., *Trump Asks SEC to Study Six-Month Reporting for Public Companies*, WALL. ST. J. (Aug. 17, 2018),

And in late 2018, the SEC obliged, issuing a notice for public comment on the question of whether the "existing periodic reporting system . . . foster[s] an inefficient outlook among registrants and market participants by focusing on short-term results." [86]

But perhaps the most salient move for students of corporate law has occurred in the courts, which have themselves begun to redefine directors' fiduciary duties to align with a long-termist brand of shareholder maximization.[87] Consider, for example, the 2013 Delaware case involving the acquisition of Trados Inc., a venture-capital-backed software start-up that had performed well enough to stay alive, but not well enough to meet the expectations of the venture capital funds underwriting it.[88] When a buyer emerged willing to acquire the company for (approximately) the value of the VCs' liquidation claim (via their preferred shares), an inter-shareholder battle royale ensued where preferred shareholders wished to cash out immediately while common shareholders—who would receive no consideration for the transaction—wished to maintain the status quo.[89] The preferreds (who held the majority of voting power and director seats) managed to cram down the deal, and the former common shareholders later sued, claiming that the preferreds' board nominees abrogated their fiduciary duties by failing to accord sufficient weight to the interests of the common shareholders, who were "permanent capital" at the firm.[90]

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https://www.wsj.com/articles/trump-directs-sec-to-study-six-month-reporting-for-public-companies-1534507058 [https://perma.cc/VPS6-EXVZ].

86 *See* Request for Comment on Earnings Releases and Quarterly Reports, 83 Fed. Reg. 65,601, 65,601 (proposed Dec. 18, 2018) (to be codified at C.F.R. pts. 210, 230, 239, 240, 243, and 249).

87 *See In re* Trados Inc. S'holder Litig., 73 A.3d 17, 37 (Del. Ch. 2013) ("[T]he duty of loyalty therefore mandates that directors maximize the value of the corporation over the long-term . . . ."); *In re* Rural Metro Corp. Stockholders Litig., 88 A.3d 54, 80–83 (Del. Ch. 2014); Laster & Zeberkiewicz, *supra* note 13, at 49. ("The directors' fiduciary duties . . . require that they maximize the value of the corporation over the long term . . . .").

88 *In re Trados Inc.*, 73 A.3d at 20.

89 *Id.* at 28–32.

90 *Id.* at 32–34.

Vice Chancellor Laster's well-cited 2013 trial opinion *In re Trados Inc. Shareholder Litigation ("Trados")* established a template that would be followed many times thereafter. In it, Laster held that the rigorous entire fairness standard of review would apply to the board's process and decision to favor one group of shareholders over another. [91] Applying this standard, the Vice Chancellor found that the board failed to demonstrate procedural fairness, since their deliberations never seriously gave due weight to the welfare of the common shareholders in negotiating the acquisition.[92] At the same time, however, Laster substantially defanged the unfair process finding, holding that the fair price for common shareholders was zero.[93] While one could certainly quibble with the finding that the common stock (which effectively represented an "at the money call option" on the firm) had no economic value whatsoever, the more durable effect of Trados is that it established a template for adjudicating fiduciary duty cases where different classes are pitted against one another. In such situations, the long-term position represented by "permanent capital" (usually the common shareholders) gets a decided thumb on the scale.

Vice Chancellor Laster doubled down on this view in the 2017 opinion *Frederick Hsu Living Trust v. ODN Holding*

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[91] *Id.* at 43.

[92] *Id.* at 56–65.

[93] Specifically, Laster's opinion states:

> I believe that Trados would not be able to grow at a rate that would yield value for the common. Trados likely could self-fund, avoid bankruptcy, and continue operating, but it did not have a realistic chance of generating a sufficient return to escape the gravitational pull of the large liquidation preference and cumulative dividend. . . . In light of this reality, the directors breached no duty to the common stock by agreeing to a Merger in which the common stock received nothing. The common stock had no economic value before the Merger, and the common stockholders received in the Merger the substantial equivalent in value of what they had before.

Id. at 77–78.

Corp.[94] This case was substantially similar to Trados (pitting short-termist preferreds who favored exit against common shareholders who favored the status quo), but here the preferred shareholders induced the board to allow them to utilize a redemption right that effectively forced an exit.[95] In denying a motion to dismiss, the Vice Chancellor once again explicitly prioritized long-term investors (conceived as common shareholders) in the fiduciary-duty space as the holders of permanent capital. Recognizing the difficulty in applying shareholder primacy when there are multiple forms of equity, Laster once again deferred to common stockholders, writing:

> In a world with many types of stock—preferred stock, tracking stock, . . . plain vanilla common stock, etc. . . . the question naturally arises: which stockholders? . . . Equity capital, by default, is permanent capital. In terms of the standard, of conduct, therefore, the fiduciary relationship requires that the directors act prudently, loyally, and in good faith to maximize the value of the corporation over the long-term for the benefit of the providers of presumptively permanent equity capital, as warranted for an entity with a presumptively perpetual life in which the residual claimants have locked in their investment. . . . [I]t generally 'will be the duty of the board, where discretionary judgment is to be exercised, to prefer the interests of common stock—as the good faith judgment of the board sees them to be—to the interests created by the special rights, preferences, etc., of preferred stock.'[96]

The long-termist view of fiduciary duties (identified with the interests of common shareholders) has emerged many times since, including the recent 2018 case of *In re PLX Technology Inc. Stockholders Litigation*, which involved a shareholder challenge to the sale of PLX (a semiconductor producer) in a strategic transaction with Avago, a designer and supplier

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94 Frederick Hsu Living Tr. v. ODN Holding Corp., No. 12108-VCL, 2017 WL 1437308, at *17 (Del. Ch. Apr. 24, 2017).

95 *Id.* at *1–3.

96 *Id.* at *17–18, *22 (internal citation omitted) (footnotes omitted).

of semiconductors.[97] The plaintiffs claimed that the transaction was the result of a secret plan by an activist hedge fund (Potomac) and its manager (Singer) who wanted to make a quick profit on an investment in the company.[98] Singer was already a PLX director, having gained a board seat through a successful proxy contest.[99] The plaintiffs claimed that Singer had secretly conspired to reach a sale price with an unannounced bidder (Avago), going so far as to work with an investment bank to engineer discounted-cash-flow valuations justifying the agreed upon price.[100] In evaluating the proposal once it was finally made, the board had no knowledge of Singer's prior involvement and only limited access to the massaged valuation metrics.[101] Also unaware of Singer's dealings, a majority of shareholders approved the transaction.[102]

After several defendants either settled or were dismissed from the suit, the key surviving issue in the case concerned the plaintiffs' aiding-and-abetting claim against Singer and Potomac.[103] Much of Vice Chancellor Laster's opinion concentrated on a predicate element of that claim: the underlying breach of fiduciary duty by the board. Having first held that the shareholder vote approving the deal had no "cleansing" effect because of several material non-disclosures about Singer's prior secret dealings, the court found a breach of fiduciary duty that turned critically on short-termist motives:

> The record in this case convinces me that Singer and Potomac had a divergent interest in achieving quick profits by orchestrating a near-term sale at PLX. During their activist campaign and subsequent proxy contest, Singer and Potomac argued vehemently that PLX should be sold quickly. Singer's thesis for investing in PLX depended entirely on a short-term sale to the

[97] *See In re* PLX Tech. Inc. Stockholders Litig. No. 9880-VCL, 2018 WL 5018535 (Del. Ch. Oct. 16, 2018).

[98] *Id.* at *4–5.

[99] *Id.* at *1.

[100] *Id.* at *1–5.

[101] *Id.* at *4.

[102] *Id.* at *3.

[103] *Id.* at *4–5.

> other bidder who emerged during the go-shop period for the IDT transaction. He never prepared any valuation or other analysis of the fundamental value of PLX. He lacked any ideas for generating value at PLX other than to sell it. . . . Taken as a whole, this evidence suggests that Potomac and Singer undermined the Board's process and led the Board into a deal that it otherwise would not have approved. . . . [B]y withholding this information from the rest of the Board, Singer breached his fiduciary duty and induced the other directors to breach theirs. [104]

Interestingly, like in his *Trados* opinion, Vice Chancellor Laster proceeded to defang much of the foregoing analysis by holding the overall deal price constituted a "fair" value of the company.[105] As in *Trados*, this final move seems somewhat curious, as it involves a "quasi-appraisal" approach to damages rather than a "rescissory" approach, which often would follow a successful claim by a plaintiff that a sale would/should never have taken place. Thus, while the opinion ups the ante on characterizing short-termist behavior as inconsistent with fiduciary duties, it largely dampens the consequences of such a finding through its holding as to the remedy. Furthermore, since the court focuses specifically on Singer's divergent interests, the decision does not limit those activists who focus on improving long-term strategies (and curbing long term bias). Indeed, the court is explicit that mere association with an activist hedge fund is not by itself an indication of a breach of directors' duties.[106]

From the brief review above, it seems clear that the Delaware courts have begun to migrate towards a clear recognition of long-term equity value as the sine qua non of fiduciary duties. They have thus far done so, however, with a decidedly

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[104] *Id.* at *42, *47.

[105] *Id.* at *5.

[106] *Id.* at *42 ("It is not enough for a plaintiff simply 'to argue in the abstract that a particular director has a conflict of interest because she is affiliated with a particular type of institution' that has particular incentives or pursues a particular strategy. At trial, a plaintiff must prove by a preponderance of the evidence that the director harbored a divergent interest.").

light touch, by fashioning creative doctrinal analyses and/or remedies that dampen the most severe consequences of a breach through short-term-oriented decisions. Even so, these recent doctrinal events represent a clear early signal that the debate over short-termism—while still arguably locked in a stalemate among many academics—has begun to move the judicial needle in important ways.

It is unlikely that any single Article (including ours) can definitively resolve the debate over short-termism. Nevertheless, we aspire to help reassess it, motivated by two aspects of the debate that we find paradoxical. First, conventional wisdom on both sides seems to presuppose the sacrosanctity of unalloyed long-term value maximization. That is, the goal of long-term value is unassailable and uncontroversial (even as the combatants bicker about whether short term pressures preempt or catalyze it). Throughout, however, and in sharp contrast to the short-term bias debate, long-term value has remained the darling of nearly all sides of the debate in corporate practice and policy, frequently equated with efficiency, optimality and growth.[107] But is it true that long-termism could never be excessive, biased, or skewed? In our view, the received debate pays little to no attention to this question. Has this assumption even been tested or thought through carefully? Are there no reasons why managers might prefer inferior long-term investments over superior short-term gains?

Second, assuming arguendo that activists fall prey continually and perpetually to short-term biases, then it must be the case that they leave significant value on the table. Why they would do so is a mystery. Why would sophisticated and financially motivated hedge fund managers operating in a decidedly competitive market chase only limited short-term gains, if (through a modicum of patience) they could derive substantially higher returns by waiting?[108] And why would they continue to do so for over a decade, across both economic booms and busts? Activists have it within their power to correct their own biases, by (for instance) choosing a compensation structure that offers lower rewards for short-term performance.

[107] *See supra* notes 17–18 and accompanying text.

[108] *See* Roe, *supra* note 8, at 987.

Strikingly, however, not only have hedge funds not moved in this direction, but they are now doing the opposite—shifting from the common 2% and 20%, to 1.5% and 20%—rewarding fund managers even less on assets, and relatively more on short-term appreciation.[109] To be sure, long term compensation would not necessarily alleviate short-termist pressure from hedge fund investors, who often redeem their investment if short-term performance is weak.[110] Indeed, hedge funds suffered high rates of liquidation during the last financial crisis.[111] But here still, many investors are also sophisticated and should be sensitive to long-term value; it seems curious that funds would not develop tools to commit to long-term gains, or signal the value of long-term investment to their investors.[112] All told, even if short termism could erupt episodically, why should it persist for so long in capital markets, among supposedly sophisticated professionals, and across economic booms and busts alike?

As the following Parts will argue, these two puzzles (and their possible resolution) may well be intertwined. In contrast to conventional wisdom, we will advance the thesis that long-termism need not be perfect. Rather, similar to short-term bias, managing for the long term may sometimes exhibit its own biases. Long-term projects, we argue below, are especially susceptible to managerial overconfidence, and as a result, systematic overestimation.[113] Since managers disproportionally overestimate the expected value of their long-term projects, they skew their own decisions away from objectively superior

[109] *See* Lindsay Fortado, *Hedge Fund Investors Question '2 and 20' Fees*, FIN. TIMES (June 6, 2017), https://www.ft.com/content/291081ba-49df-11e7-a3f4-c742b9791d43 [https://perma.cc/VP5U-YRU6].

[110] *See, e.g.*, Coffee & Palia, *supra* note 10, at 573.

[111] *See* Ben-David et al., *supra* note 60, at 2–4.

[112] *See* Roe, *supra* note 8, at 987–89. *But see* Jeremy C. Stein, *Why Are Most Funds Open-End? Competition and the Limits of Arbitrage*, 120 Q. J. ECON. 247, 248 (2005) (showing how, under asymmetric information, fund managers signal their quality to investors by keeping their funds open for withdrawal); Andrei Shleifer & Robert W. Vishny, *The Limits of Arbitrage*, 52 J. FIN. 35, 49–51 (1997) (showing how fund managers might skip profitable long-term investments to demonstrate short-success to their investors).

[113] *See infra* Part III.

short-term investments. And when such a phenomenon holds, short-termism is not only plausible, but it can become an indispensable chaperone to long-termism, effectively negating its most deleterious effects and explaining the forgoing puzzles with new-found parsimony.

III. A NEW APPROACH: THE OVERLOOKED LONG-TERM BIAS

This Part challenges the assumption that long-termism is essentially bias free. Rather, it will argue that similar to short-term bias, long-term frames can and have catalyzed a different type of bias in managers' decisions. Long-term projects, we will argue, are prone to overconfidence bias, and in turn to overestimation by managers. And, since managers systematically overestimate the value of their own long-term projects, they will tend to prefer them to at least some short-term projects that have superior returns. We refer to this phenomenon as long-term bias. The definition of long-term bias, thus, is the mirror image to that of short-term bias.

Table 1: Definitions

Long-Term Bias	A preference for a long-term investment over a superior short-term investment/return.
Short-Term Bias	A preference for a short-term investment/gain over a superior long-term investment/return.

The intuition for long-term bias is straightforward: managers tend naturally to be enamored with their projects as a whole, resulting in a skew that leans (over time) towards their long-term projects. This is only the starting point for our analysis, however. Relying on evidence and theory from overconfidence bias literature in general, and managerial overconfidence bias in particular, Section III.A argues that long-term investments are prone to overestimation as they typically involve high degrees of uncertainty, significant illusions of control, weak accountability mechanisms and remote feedback.

Then, as Section III.B shows, natural constraints on overconfidence (and debiasing over time) are likely to be especially limited when it comes to long-term projects, resulting in systematic long-term bias. In Section III.C, we make use of case studies to illustrate how long-term bias has manifested in managerial decisions involving three well-known companies.

A. Long-Term Investments: Magnified and Influential Overconfidence

Drawing on an extensive literature in psychology and behavioral finance, this Section will show that several factors have been identified as contributing to managerial overconfidence. These factors include: high upside potential, vagueness of a project's likelihood of success, illusion of control, excessive reliance on one's own skills, competition neglect, commitment to the project, and dismissal of incoming feedback and data. Moreover, we argue, each is more salient with respect to long-term projects. As a result, overconfidence is especially high, influential, and resilient with respect to long-term projects.

1. Managerial Overconfidence – Overestimating Probabilities of Success

Overconfidence, sometimes known as the "Lake Wobegon" effect, has been documented extensively. For example, most people rank themselves above average in a range of skills and circumstances, including driving skills and the likelihood they remain healthy and married.[114] More than 90% of people, in

[114] *See, e.g.*, Neil D. Weinstein, *Unrealistic Optimism About Future Life Events*, 39 J. PERSONALITY & SOC. PSYCHOL. 806, 813–14, 818–19 (1980) (finding individuals tend to believe they are more likely than their peers to experience positive events and less likely to experience negative events. Types of events considered included one's health, longevity, employment and marriage); Lynn A. Baker, & Robert E. Emery, *When Every Relationship is Above Average: Perceptions and Expectations of Divorce at the Time of Marriage*, 17 L. & HUM. BEHAV. 439, 443 (1993); Thomas G. Calderon, *Predictive Properties of Analysts' Forecasts of Corporate Earnings*, 29 MID-ATLANTIC J. BUS. 48–52 (1993); Manju Puri, & David T. Robinson, *Optimism and Economic Choice*, 86 J. FIN. ECON. 71, 97 (2007); David A. Armor & Shelley E. Taylor, *When Predictions Fail: The Dilemma of Unrealistic*

fact, rank themselves above average in driving skills;[115] 70% of high school students ranked themselves above average in leadership skills;[116] and 94% of college professors rated their work to be above average.[117]

But what about corporate managers? One might think that a competitive business environment might restrain overconfidence, making executives more realistic. Yet, in a range of studies—including experiments, surveys and data analyses—managers demonstrated an exceptionally prodigious "better than average effect."[118] Indeed, executives are highly optimistic with respect to the likelihood of their projects' success. For example, while a majority of U.S. startups only survive for several years, the vast majority of U.S. entrepreneurs (80%) estimated that their business would "succeed" (against a

Optimism, *in* HEURISTICS & BIASES: THE PSYCHOLOGY OF INTUITIVE JUDGMENT 334, 334–36 (Thomas Gilovich et al. eds., 2002) [hereinafter, Armor & Taylor, *When Predictions Fail*].

115 Ola Svenson, *Are We All Less Risky and More Skillful Than Our Fellow Drivers?*, 47 ACTA PSYCHOLOGICA 143, 146 (1981).

116 David Dunning et al., *Flawed Self-Assessment: Implications for Health, Education, and the Workplace*, 5 PSYCHOL. SCI. PUB. INT. 71–106 (2004).

117 K. Patricia Cross, *Not Can, But Will College Teaching be Improved?*, 17 NEW DIRECTIONS IN HIGHER EDUC. 1, 9–10 (1977).

118 *See, e.g.*, Laurie Larwood & William Whittaker, *Managerial Myopia: Self-Serving Biases in Organizational Planning*, 62 J. APPLIED PSYCHOL. 194, 198 (1977) (MBA students and corporate presidents exhibited better than average effects, both in estimating their own skills and in estimating their companies' predicted growth rates); J.B. Kidd & J.R. Morgan, *A Predictive Information System for Management*, 20 OPERATIONAL RES. Q. 149, 162–65 (1969) (finding that managers predict better operational performance than they eventually achieved); Campbell Harvey et al., *Managerial Attitudes and Corporate Actions*, 109 J. FIN. ECON. 103, 109–12 (2013) (CEOs gained an average optimism score of 20.34 relative to 14.33–15.15 in the general population); James G. March & Zur Shapira, *Managerial Perspectives on Risk and Risk Taking*, 33 MGMT. SCI. 1404, 1410–11 (1987). Executives also exhibit another form of overconfidence, an "over preciseness" effect, that is, overestimation of the accuracy of their predictions. *See*, *e.g.*, Itzhak Ben-David et al., *Managerial Miscalibration*, 128 Q. J. ECON. 1547, 1558–63 (2013) (finding miscalibration among CFOs)

background five-year median survivorship measure).[119] Rather than accepting risk estimates as given, executives typically believe that with the right efforts and planning they can significantly improve their odds of success.[120] And, they exhibit this proclivity even with respect to pure chances events.[121]

It is almost certainly the case that some degree of optimism is a de facto job requirement for managers and entrepreneurs whose job description, after all, requires them to overcome their own risk aversion and analysis paralysis. Nevertheless, there can be too much of a good thing, and recent literature in behavioral finance finds overconfidence to be correlated with financial losses and investment distortions. Ulrike Malmendier and Geoffrey Tate, who pioneered much of this research, developed measures for CEOs' overconfidence levels, testing its effects on firms' investments and acquisitions.[122] As proxies for overconfidence, Malmendier and Tate adopted two main measures—press mentions of the CEO as confident, and the extent to which the CEO holds on to options and stock of the company, rather than selling.[123] Presumably, risk-averse CEOs, who are highly invested in their company (their future, trajectory and compensation are all affected by the firm's success), should diversify the equity compensation they receive as soon as their contract allows. If, however, the CEO believes that investors underestimate the value of her company, she might hold on to her options and stock despite the associated

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[119] *See* Arnold C. Cooper et al., *Entrepreneurs' Perceived Chances for Success*, 3 J. BUS. VENTURING 97, 103 (1988).

[120] *See* March & Shapira, *supra* note 118, at 1410–11.

[121] *Id.* at 1406–07. *See also* Ellen J. Langer & Jane Roth, *Heads I Win, Tails It's Chance: The Illusion of Control as a Function of the Sequence of Outcomes in a Purely Chance Task*, 32 J. PERSONALITY & SOC. PSYCHOL. 951, 954–55 (1975).

[122] *See generally* Malmendier & Tate, *Investment*, *supra* note 34; Ulrike Malmendier & Geoffrey Tate, *Does Overconfidence Affect Corporate Investment? CEO Overconfidence Measures Revisited*, 11 EUR. FIN. MGMT. 649 (2005) [hereinafter Malmendier & Tate, *Measures Revisited*].

[123] *See* Malmendier & Tate, *Measures Revisited*, *supra* note 122, at 652–53.

diversification costs.[124] In evaluating these two measures for overconfidence, Malmendier and Tate found that overconfident CEOs "overpay for target companies and undertake value-destroying mergers."[125] Interestingly, they also found evidence for personal loss for these executives from their overconfidence. [126]

Significantly, Malmendier & Tate found, overconfident CEOs tend to pose the largest danger when they have lots of "house money" to work with in the form of cash flow available to them from within the firm.[127] Overconfident CEOs use such internal cash flows to pursue large investments. However, since they overestimate their projects' actuarial prospects, they also believe that their firm stock price is too low; and accordingly, if they had to raise external funds from investors to finance their ideas, they become more reluctant to invest.[128] One influential study found that independent directors that were mandated by exchanges' listing standards played an important role in restraining overconfident managers and mitigating overconfidence costs.[129] For firms with overconfident managers, adding independent directors to the board, even if only to comply with the then-newly-enacted listing standards, resulted in lower investments and higher profitability.[130]

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[124] *See id.*

[125] Malmendier & Tate, *Acquisitions*, *supra* note 35, at 20, 30–31, 34 (finding that overconfident CEOs were more than 1.5 times more likely to acquire other companies, and their acquisitions triggered significant negative market responses).

[126] *See* Malmendier & Tate, *Measures Revisited*, *supra* note 122, at 653 ("Indeed, it appears that CEOs who hold all the way to expiration would have been better off on average by exercising (1, 2, 3, or 4 years) earlier and simply investing the proceeds in the S&P 500.").

[127] Malmendier & Tate, *Investment*, *supra* note 34.

[128] *Id. See also* J.B. Heaton, *Managerial Optimism and Corporate Finance*, 31 FIN. MGMT. 33 (2002) (developing a model that shows how managerial optimism results in a sensitivity of investment to cash flow).

[129] *See* Suman Banerjee et al., *Restraining Overconfident CEOs Through Improved Governance: Evidence from the Sarbanes-Oxley Act*, 28 REV. FIN. STUD. 2812, 2822–37 (2015).

[130] *Id.* at 2812 (finding that in firms that added independent directors to comply with the mandate, "overconfident CEOs reduce investment and

2. Long-Term Projects: Little Optimism is Sufficient for High Overestimation

The previous Section surveyed evidence showing that managers frequently overestimate the probability of their projects to succeed.[131] That is, they are optimistic in general. But such an argument is not enough by itself to establish a long-term bias. Below, we show several ways that managerial optimism is likely to be especially distortive in assessing long-term investments. That is, for long-term projects, even a moderate level of optimism bias could result in a far larger overestimation of the project's expected value, relative to its objective, expected value.

One key reason optimism disproportionally affects long-term projects is that optimism has greater distortive effect as the volatility of the project's potential outcomes increases. Long-term projects must be "in the oven" for extended periods, during which risk and uncertainty continue to percolate. Consequently, long-term projects frequently involve higher overall volatility. Thus, for long-term projects, both the potential upside and downside are relatively large. As illustrated below, however, since overconfident managers overestimate upside prospects, the large upside associated with more volatile long-term projects results in a larger distortion of the project's expected value.[132]

To illustrate, consider two hypothetical investments a firm might undertake, a long-term investment ("LT") and a short-term investment ("ST"). Assume that both investments involve some uncertainty and risk. In particular, there are two potential outcomes of equal probability to each investment. As depicted in Table 2, ST could produce a payoff of either 200 or 320, each with 50% probability, and thus the investment has an expected value of 260. LT produces either 0 or 500, each with 50% probability.[133] Thus, investing in LT involves a

risk exposure, increase dividends, improve post-acquisition performance, and have better operating performance and market value").

[131] *See supra* Section III.A.1.

[132] *See infra* tbl.2.

[133] To be sure, overconfidence also leads managers to underestimate volatility, especially with respect to long-term assessments. Yet, due to the

higher volatility of outcomes (that is, a higher range between potential outcomes) than ST, but a lower expected value (250 relative to 260).

A manager who makes decisions according to objective, unbiased expected value assessments would obviously choose to pursue investment ST, as it involves higher expected returns with lower risk.[134] But an overconfident manager may not. To see why, suppose that the manager is overconfident about her abilities, in that she believes that for either investment, the probability of the good outcome to occur is 60% rather than 50%, and accordingly the probability of the bad outcome to occur is only 40%.[135] As Table 3 shows, exhibiting overconfidence toward both investments results in a stark reversal in the rank of investment ST relative to LT: with optimistic probabilities, the expected value of investment LT seems higher than the expected value of investment ST (300 relative to 272). While an optimistic manager overestimates the probability of a good scenario for both investments, she overestimates the expected value of investment ST by less. The manager's optimism is thus amplified by the volatility of the long-term investment.[136] Consequently, overconfident managers might be

significantly higher objective volatility of long-term projects, managers assign a higher volatility to long-term project than to short-term ones. *See* Ben-David et al., *supra* note 118, at 1561–63.

[134] For purposes of illustration, assume that all risk is diversifiable so that volatility does not matter. To be sure, if risk is not diversifiable, risk aversion could make the LT investment less desirable for the manager. Yet, managers display a significantly high tolerance for risk. *See e.g.*, Harvey et al., *supra* note 118, at 109 (finding that only 9.8% of CEOs displayed a low risk tolerance relative to 64% of the general population); Po-Hsin Ho et al., *CEO Overconfidence and Financial Crisis: Evidence from Bank Lending and Leverage*, 120 J. FIN. ECON. 194201–06 (2016) (finding that banks with overconfident CEOs were more aggressive in lending during the recent financial crisis. Overconfident banks issued more loans, increased their leverage more, experienced higher rates of loan defaults and greater drops in market value).

[135] For a formal modeling of managerial optimism as reflected in optimistic probability estimations, see Heaton, *supra* note 128.

[136] To be sure, if managers dislike losing, loss aversion could increase their preference for the ST low volatility investments. Yet, as shown in Section III.B.3, *supra*, managers significantly underestimate the probability of failure, believing that they have a control on it, and can bring it close to

drawn to long-term projects because of the high upside that they offer. Indeed, overconfident managers—measured using options-based proxies, and the character of descriptions in the press—invest disproportionally in R&D, where payoffs are inherently quite uncertain.[137]

Table 2: Long-Term Volatility

	Potential Outcomes		**Objective Probabilities**		**Objective EV**
Short Term	200	320	0.5	0.5	**260**
Long Term	0	500	0.5	0.5	**250**

zero, which practically eliminates, in their mind, their risk of losing. *See* March & Shapira, *supra* note 118, at 1410–11; Christoph Schneider & Oliver Spalt, *Conglomerate Investment, Skewness, and the CEO Long-Shot Bias*, 71 J. FIN. 635 (2016) (finding that in allocating capital within conglomerates, managers allocated disproportionally large amounts of capital to investments with high positive skewness, that is, investments with only a low probability of high payoffs); KAHNEMAN, THINKING, *supra* note 28, at 252 ("[O]ptimistic bias is a significant source of risk taking.").

[137] *See* David Hirshleifer et al., *Are Overconfident CEOs Better Innovators?*, 67 J. FIN. 1457, 1471–73 (2012). The association of volatility and overconfidence is not limited to executives' behavior. For instance, analysts' overconfidence bias increases with uncertainty, measured by standard deviation of earnings forecasts. *See* Lucy F. Ackert & George Athanassakos, *Prior Uncertainty, Analyst Bias, and Subsequent Abnormal Returns*, 20 J. FIN. RES. 263, 267–70 (1997).

Table 3: Long-Term Volatility and Overconfidence

	Potential Outcomes		**Optimistic Probabilities**		**Optimistic EV**
Short Term	200	320	0.4	0.6	**272**
Long Term	0	500	0.4	0.6	**300**

Note that the bias towards long-term investments in this example does not rely on an assumption that managers are more optimistic for long-term investments. Rather, the analysis assumed the same probabilistic degree of overconfidence toward both investments. In particular, these examples assumed that for both LT and ST an optimistic manager will place a probability of 60% on the good scenario instead of 50%. As we show in the following Section, the example above may even be a "best case" scenario where long-termism emerges. That is, in many realistic settings, the manager may also systematically overestimate the probability of the good scenario for the LT project, exacerbating the above distortion even further.

3. Optimism is Stronger for Long-Term Projects

The previous Section illustrated how even "equal opportunity" optimism can disproportionally favor long-term investments—simply by dint of the higher volatility of such projects due to their longer time periods. This Section will argue that there are additional reasons to believe that optimism manifests specifically for long-term projects. That is, for long-term projects managers will be particularly prone to overestimating the probability of success more than they would for a short-term project. Recall that the previous Section assumed that for both the LT and the ST investment, an optimistic manager would assess the probability of the good scenario to occur as 60%, instead of the objective probability of 50%. Below, we will argue that for LT projects, she plausibly will assess this probability to be even higher. For example, while the overconfident manager will assess the probability of a ST project to succeed at 60% instead of the objective 50%, the same overconfident manager will assess the probability of the LT project to succeed at 70% or 80% instead of the objective 50%. This overconfidence "premium" for long-term projects can be driven by many factors—an illusion of control, overestimation of the relevance of one's skills, competition neglect, commitment to the project, and the absence of a reference class[138]—each of which, we argue, is aggravated as investment time periods extend. We discuss each factor in turn.

An emerging academic literature finds that managers are overconfident with respect to the likelihood that their project will succeed *in part* because they believe that they can control the underlying risk. Surveys of executives have found, for example, that managers typically believe with the right efforts and planning, they can significantly improve the odds of their project to succeed.[139] This *illusion of control* is so strong, one study found, that executives rarely accept risk estimates as given—even with respect to pure chance events they tend to exhibit undue optimism.[140] The long time horizon that long-term investments entail mechanically perpetuates this illusion of control—as executives convince themselves that over time solutions will be found and obstacles will be overcome. For example, Navistar's CEO Ustian vested his complete confidence in a revolutionary EGR technology in part because his company had nearly a decade to develop the technology before new environmental standards were scheduled to come into effect.[141] Similarly, even after it was clear that Yahoo was drawing its final breaths, Marissa Mayer in her last interview

[138] *See, e.g.*, David Dunning et al., *Ambiguity and Self-Evaluation: The Role of Idiosyncratic Trait Definitions in Self-Serving Assessments of Ability*, 57 J. PERSONALITY & SOC. PSYCHOL. 1082, 1087–88 (1989).

[139] March & Shapira, *supra* note 118, at 1410–11.

[140] *Id.* at 1410.

[141] *See infra* notes 263–70 and accompanying text.

suggested that several more years was all she needed in order for her plan to succeed and for Yahoo to be saved.[142]

A second factor that asymmetrically increases managers' long-term overconfidence is their tendency to overestimate the relevance of their own skill.[143] For long-term projects, where ambiguity reigns, these biases have real bite, since it is not yet clear which skills could maximize success.[144] Indeed, ambiguity has been shown to magnify optimism: in one influential study, when subjects were free to come up with different traits that justify their high evaluation of themselves, they were highly optimistic.[145] When they were given a list of traits, however, they ranked themselves lower than they previously did.[146] For long-term projects, thus, where details are most lacking and fortunes most ambiguous, managers will focus on their positive skills, traits and general advantages, even if those traits will turn out to irrelevant to the project's fate.

Third, managers also neglect other managers' skills and accordingly disregard potential competition. For example, in an entry game experiment, managers were more likely to enter the market with a new company when they were told that success in competition was skill-driven than when it was drawn randomly.[147] For long-term projects, this bias is

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[142] *See* Goovaerts, *supra* note 25.

[143] *See* KAHNEMAN, THINKING, *supra* note 28, at 255–64; Daniel Kahneman & Dan Lovallo, *Timid Choices and Bold Forecasts: A Cognitive Perspective on Risk Taking*, 39 MGMT. SCI. 17, 27 (1993) ("People also exaggerate their control over events, and the importance of the skills and resources they possess in ensuring desirable outcomes.").

[144] Furthermore, even when information is available, people tend to think about future events in general form and postpone the details to a later time. *See, e.g.*, Yaacov Trope & Nira Liberman, *Temporal Construal*, 110 PSYCHOL. REV., 403, 405 (2003) ("Construal level theory (CLT) specifically proposes that individuals use more abstract mental models, or higher level construals, to represent information about distant-future events than information about near-future events."); Yaacov Trope & Nira Liberman, *Temporal Construal and Time-Dependent Changes in Preference*, 79 J. PERSONALITY & SOC. PSYCHOL. 876, 888 (2000).

[145] *See* Dunning et al., *supra* note 138, at 1084–85.

[146] *Id.*

[147] *See* Colin Camerer & Dan Lovallo, *Overconfidence and Excess Entry: An Experimental Approach*, 89 AM. ECON. REV. 306, 314–15 (1999)

plausibly stronger since future competition is difficult to predict when the project is initiated. Furthermore, competition neglect is exacerbated when a manager overestimates the relevance of his skills, which, as argued before, is also more likely with respect to long-term projects. [148]

Finally, there is also direct evidence that a distant "finish line" promotes higher degrees of overconfidence directly. For one example, college students were fairly optimistic about their first-year salaries, but became significantly less optimistic as graduation approached.[149] Similarly, students were more optimistic with respect to their performance in a mid-term exam when asked at the beginning of the semester, than on the day of the exam itself.[150] Furthermore, subjects who were asked to predict their performance in a number of arbitrary tasks were significantly more optimistic when asked long before the task than immediately prior to performing it.[151]

Executives' predictions, too, appear more optimistic with respect to long-term projects. A study analyzing three- to five-year earnings growth forecasts among executives found that these long-term forecasts were highly overoptimistic, significantly exceeding actual growth rates.[152] In fact, the average long-term growth forecast predicted (15%) was five times

(finding in an experiment that overconfidence about skill leads to excessive entry).

148 *Id.*

149 *See* James A. Shepperd et al., *Abandoning Unrealistic Optimism: Performance Estimates and the Temporal Proximity of Self-Relevant Feedback*, 70 J. PERSONALITY & SOC. PSYCHOL., 844, 846–48 (1996). Juniors' and sophomores' optimism, in contrast, did not decline over the year, suggesting that the proximity to benchmarking moments uniquely dampens optimism. *See id.*

150 *See* Thomas Gilovich et al., *The Effect of Temporal Perspective on Subjective Confidence*, 64 J. PERSONALITY & SOC. PSYCHOL. 552, 553 (1993); *see also* Armor & Taylor, *When Predictions Fail*, *supra* note 114, at 334–35.

151 *See* Gilovich et al., *supra* note 150, at 553–54.

152 *See* David S. Koo & P. Eric Yeung, Managers' Forecasts of Long-Term Growth in Earnings: New Information or Cheap Talk? 2–3 (unpublished manuscript), https://www.stern.nyu.edu/sites/default/files/assets/documents/Eric%20Yeung.pdf [https://perma.cc/EJ9C-5QMB].

larger than the average realized growth rate (3%).[153] Also, consistent with their optimistic long-term beliefs, overconfident CEOs were found to specifically bargain for more options-intensive compensation packages.[154]

In sum, the emerging literature on managerial overconfidence, its origins, and its triggers lends both direct and indirect evidence to the idea that optimism bias is likely to thrive systematically with regard to long-term projects.

B. Weak Constraints on Long-Term Optimism

The previous Section argued that optimism's origins and triggers interact materially with long-term horizons and the vagueness of the project. Still, these findings alone would still not pose a particular problem if there existed reliable constraints that put a damper on long-term biases. We take up this issue below, arguing that the usual constraints on overconfidence tend to be weaker for long-term projects.

1. Inside View, Outside View, and Durable Long-Termism

Daniel Kahneman and Amos Tversky, who made seminal contributions to the research of overconfidence bias, explored several ways that optimism could potentially be mitigated. As they found in a well-known series of experiments, optimism results from people's tendency to adopt an "inside view"—based solely on plans, scenarios and simulations they run subjectively, while ignoring an "outside view"—one based on statistical analysis and aggregate data from similarly situated cases.[155] The inside view can fall prey to natural biases, since one's plans tend naturally to focus on success scenarios and discount potential obstacles. In short, managers "rarely plan

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153 *Id.*

154 *See* Mark Humphery-Jenner et al., *Executive Overconfidence and Compensation Structure*, 119 J. FIN. ECON. 533, 538–42 (2016).

155 *See* Kahneman & Tversky, *Intuitive Prediction*, *supra* note 28, at 421.

to fail."[156] For example, people who were asked to assess the time of task completion in experiments constructed forecasts that were close to the best-case scenario while ignoring relevant statistics and past experiences with obstacles.[157] As a result, they suffered from a "*planning fallacy*"—a common bias in estimating how long it takes to complete a task.[158]

If, however, one contrasts these individual best-case scenarios (the inside view), with a data driven analysis (the outside view), debiasing is possible.[159] For example, when college students were asked to forecast their future academic performance, on average they predicted it would be better than 84% of their peers.[160] However, when students were asked first about their entrance scores, as well as their peers' entrance scores, their predictions were significantly less sanguine.[161] Thus, to avoid unrealistic predictions, Kahneman and Tversky recommend that managers should conduct a "reference class forecasting"—that is, in making forecasts with respect to their own projects, managers should rely on *the distribution of outcomes* of similar "benchmark" projects.[162]

People, however, frequently ignore the outside view.[163] For example, despite the evidence that accounting for the outside view could result in a significantly better estimation of time

[156] David A. Armor & Shelley E. Taylor, *Situated Optimism: Specific Outcome Expectancies and Self-Regulation*, 30 ADVANCES EXPERIMENTAL SOC. PSYCHOL. 309, 323 (1998); *see also* KAHNEMAN, THINKING, *supra* note 28, at 252–253.

[157] *See* Roger Buehler et al., *Exploring the "Planning Fallacy": Why People Underestimate Their Task Completion Times*, 67 J. PERSONALITY & SOC. PSYCHOL. 366, 379 (1994).

[158] *See* KAHNEMAN, THINKING, *supra* note 28, at 250.

[159] *See* Lovallo & Kahneman, *Delusions*, *supra* note 28, at 63 ("The outside view is more likely to produce accurate forecasts and much less likely to deliver highly unrealistic ones.").

[160] *See id.* at 61.

[161] *See id.* (noting that a second group of students, when first asked about their entrance scores, predicted to perform better than only 64% of their peers).

[162] *See* Kahneman & Tversky, *Intuitive Prediction*, *supra* note 28, at 418–19.

[163] *See id.*; *see also* Kahneman & Lovallo, *supra* note 143, at 26.

of completion,[164] an entire team working on a curriculum construction project for the Israeli Army ignored this information, leading to a drastic underestimation of time of completion.[165] This tendency to ignore the outside view affects managers and organizations alike.[166] For their part, managers are not likely to solicit such a view, and even if they do, it can frequently be ignored.[167] Indeed, a review of several hundred forecasts of transportation infrastructure projects' costs found that not one of them included a reference class forecast.[168]

Long-term projects belong to a special class—one that would benefit most from the outside view (if adopted), but at the same time are least likely to receive it.[169] The value of the outside view seems evident for long-term projects, which (as discussed above) involve especially high levels of optimism, which can substantially distort their value.[170] For several reasons, however, managers are not likely to contrast these long-term projects with data. First, an outside view requires identifying an appropriate reference class—a group of similar

[164] *See* KAHNEMAN, THINKING, *supra* note 28, at 250.

[165] *See id.* at 245–47.

[166] *See* Lovallo & Kahneman, *Delusions*, *supra* note 28, at 61, 63.

[167] *See id.* ("Even when companies bring in independent consultants to assist in forecasting, they often remain stuck in the inside view. If the consultants provide comparative data on other companies or projects, they can spur useful outside-view thinking. But if they concentrate on the project itself, their analysis will also tend to be distorted by cognitive biases.").

[168] Bent Flyvbjerg et al., *How (In)accurate Are Demand Forecasts in Public Works Projects? The Case of Transportation*, 71 J. AM. PLAN. ASS'N. 131, 141 (2005). *See also* BENT FLYVBJERG ET AL., MEGAPROJECTS AND RISK: AN ANATOMY OF AMBITION 6 (2003); Bent Flyvbjerg et al., *What Causes Cost Overrun in Transport Infrastructure Projects?*, 24 TRANSPORT REV. 3 (2004).

[169] *Cf.* Lovallo & Kahneman, *Delusions*, *supra* note 28, at 63 ("The outside view's advantage is most pronounced for initiatives that companies have never attempted before—like building a plant with a new manufacturing technology or entering an entirely new market. It is in the planning of such de novo efforts that the biases toward optimism are likely to be great. Ironically, however, such cases are precisely where the organizational and personal pressures to apply the inside view are most intense.").

[170] *See supra* notes 131–42 and accompanying text.

projects—that would provide relevant data.[171] Long-term projects, however, are typically unique (often by design), making a reference class scarce, or highly subjective.[172] Furthermore, since managers construct long-term investment plans around their unique skills, external benchmarks might make them even more skeptical that a posited reference class has probative value.[173]

Second, the initial plan of a long-term project is predominantly composed of inspiration, rather than detailed implication, and is pregnant with the promise of vagueness that reduces the likelihood that managers will contrast it against benchmarking data. Kahneman and Tversky found that more than any other factor, the main reason that people ignore the outside view is the *strength of the narrative* they have, and particularly its *coherence*.[174] A good, coherent story often carries far more weight than cold, statistical evidence.[175] And a good coherent story, as Kahneman explains, is especially conjurable when objective facts are scarce:

> You build the best possible story from the information available to you, and if it is a good story, you believe it. Paradoxically, it is easier to construct a coherent

[171] *See* Kahneman & Tversky, *Intuitive Prediction*, *supra* note 28, at 417–18.

[172] *See* Lovallo & Kahneman, *Delusions*, *supra* note 28, at 63 ("Of course, choosing the right class of analogous cases becomes more difficult when executives are forecasting initiatives for which precedents are not easily found. . . . Imagine that planners have to forecast the results of an investment in a new and unfamiliar technology.").

[173] *See* Kahneman & Tversky, *Intuitive Prediction*, *supra* note 28, at 416 ("The tendency to neglect distributional information and to rely mainly on singular information is enhanced by any factor that increases the perceived uniqueness of the problem.").

[174] *See* Kahneman & Tversky, *Intuitive Prediction, supra* note 28.

[175] *See* KAHNEMAN, THINKING, *supra* note 28, at 264 ("[C]onfidence is determined by the coherence of the story one has constructed, not by the quality and amount of the information that supports it."). In a line of experiments Tversky and Kahneman found that coherency has a significant, if not the most significant, influence on predictions. *See* Kahneman & Tversky, *Intuitive Prediction, supra* note 28.

> story when you know little, when there are fewer pieces to fit into the puzzle.[176]

For long-term projects, since little information is available (almost by definition), managers are free to construct alternative scenarios, all of which could be designed to be perfectly coherent, and highly overconfident.

2. Lack of Clear and Immediate Feedback

In addition to a lack of existing comparison benchmarks, overconfidence for long-term projects also tends to lack another bridling force, in the form of clear and immediate feedback. Several researchers have found that the mere expectation of clear and immediate feedback dampens undue optimism in making predictions.[177] In one experiment, for example, participants were asked to assess the likelihood of testing positive for a serious medical condition.[178] Assuming that they would receive the results in three to four weeks, participants were overoptimistic, assessing a less than average likelihood.[179] Yet, close to the end of the experiment, after these participants learned that results would be available in a few minutes, they largely abandoned their optimism, assessing an average likelihood instead.[180]

With long-term projects, however, feedback is often vague, noisy, and distant. Such projects are by definition cash flow money pits early on, whose performance is measurable only years down the road.[181] Furthermore, in the long-term, managers have plenty of opportunities to attribute failure to exogenous events that are not in their control. Such discounting of

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[176] KAHNEMAN, THINKING, *supra* note 28, at 201.

[177] Armor & Taylor, *When Predictions Fail*, *supra* note 114, at 339–40 (reporting studies showing that optimism is sensitive to the timing of expected feedback).

[178] Kevin M. Taylor & James A. Shepperd, *Bracing for the Worst: Severity, Testing, and Feedback Timing as Moderators of the Optimistic Bias*, 24 PERSONALITY & SOC. PSYCHOL. BULL. 915, 917 (1998).

[179] *Id.* at 923.

[180] *Id.*

[181] *See generally* Stefano Dellavigna & Joshua M. Pollet, *Investor Inattention and Friday Earnings Announcements*, 64 J. FIN. 709 (2009).

negative interim feedback—often referred to as *attribution bias*—further weakens the power and discipline of feedback on long-term projects.[182] The feedback is less intimidating, since managers know, whether consciously or not, that many things that might happen could be responsible for a project's failure.

3. Limited Learning

While impoverished learning is a problem for any project, managers' persistence and stubbornness in the face of new relevant information is particularly pernicious and damaging in the context of long-term projects. By the time information arrives, managers are typically already highly invested in their project's success, and their future career trajectories are also in play. Such highly motivated reference points, several studies have found, impede learning and exacerbate overconfidence.[183] People motivated to reach a result search their memory for facts and beliefs that support it, and ignore negative information.[184] For example, subjects who were promised a refund for finishing their tax filings early showed higher optimism with respect to the time needed to complete their reports.[185]

Second, even though the initial business plan for long-term projects is often based on sparse information—and thus is likely to have low predictive power—due to a phenomenon

[182] *See, e.g.*, Dale T. Miller & Michael Ross, *Self-Serving Biases in the Attribution of Causality: Fact Or Fiction?*, 82 PSYCHOL. BULL. 213, 213–18 (1975); N.T. Feather & J.G. Simon, *Attribution of Responsibility and Valence of Outcome in Relation to Initial Confidence and Success and Failure of Self and Other*, 18 J. PERSONALITY & SOC. PSYCHOL. 173, 173–75 (1971).

[183] *See infra* notes 187–96 and accompanying text.

[184] *See, e.g.*, Ziva Kunda, *The Case for Motivated Reasoning*, 108 PSYCHOL. BULL. 480, 482–83 (1990).

[185] Roger Buehler et al., *The Role of Motivated Reasoning in Optimistic Time Predictions*, 23 PERSONALITY & SOC. PSYCHOL. BULL. 238, 241 (1997); *see also* Rose W. Marks, *The Effects of Probability, Desirability, and "Privilege" on the Stated Expectations of Children*, 19 J. PERSONALITY 332, 349–50 (1951) (summarizing a study in which children were more likely to predict that they would draw a particular card from a mixed pack when they stood to gain a point for each card).

known as anchoring bias, subsequent assessments of the project are highly influenced by initial assessments, even if they were informed by forecasts that were admittedly arbitrary.[186] In a RAND Corporation study of major companies, for example, costs of process plants turned out to be more than double that initially assessed, and financial performance less than half that anticipated.[187] Thus, anchoring on uniformed initial plans could result in significant costs since anchoring persists even when the initial numbers are clearly wrong.[188]

Third, for typical long-term projects, relevant information is revealed only gradually. This can lead to a biased and asymmetric form of updating, where managers habitually dismiss negative information and embrace positive news, thereby reinforcing their initial optimism. Asymmetric treatment of positive versus negative news has been observed in numerous experimental contexts, as well as in neuroscience studies.[189] In a line of magnetic resonance imaging based studies, for example, participants were asked to estimate their likelihood of experiencing particular adverse life events such as Parkinson's disease, Alzheimer's disease, car theft, or robbery, before and

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186 *See* Lovallo & Kahneman, *Delusions*, *supra* note 28, at 60 ("This intuitive and seemingly unobjectionable process has serious pitfalls, however. Because the initial plan will tend to accentuate the positive—as a proposal, it's designed to make the case for the project—it will skew the subsequent analysis toward overoptimism."); Dan Ariely et al., '*Coherent Arbitrariness': Stable Demand Curves Without Stable Preferences*, 118 Q. J. ECON. 73, 75–77 (2003); Amos Tversky & Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, 185 SCI. 1124, 1128 (1974).

187 EDWARD W. MERROW ET AL., RAND CORP., A REVIEW OF COST ESTIMATION IN NEW TECHNOLOGIES: IMPLICATIONS FOR ENERGY PROCESS PLANTS 70–73 (1979).

188 Timothy D. Wilson et al., *A New Look at Anchoring Effects: Basic Anchoring and Its Antecedents*, 125 J. EXPERIMENTAL PSYCHOL. 387, 397–99 (1996) (warning participants of an anchoring effect did not help them avoid it); Fritz Strack & Thomas Mussweiler, *Explaining the Enigmatic Anchoring Effect: Mechanisms of Selective Accessibility*, 73 J. PERSONALITY & SOC. PSYCHOL. 437, 442–44 (1997) (anchoring effects were found even though initial numbers were clearly wrong).

189 Sharot et al., *supra* note 30, at 1475 ("[H]ighly optimistic individuals exhibited reduced tracking of estimation errors that called for negative update in right inferior prefrontal gyrus.").

after they were presented with the average probability of these events happening to people in their socio-cultural environment.[190] Participants' updating their beliefs in response to information was remarkably asymmetric—brain activity showed a failure of the frontal lobe region to code undesirable information, when coding would have reduced the individual's optimism (by increasing the probability of an adverse event).[191] Furthermore, overconfidence is associated with stronger updating bias. In a field experiment, the Canadian Inventor Assistance Program provided inventors with an objective assessment of the commercial prospects of their invention.[192] After receiving a projection of failure (which as the organization track record suggests was highly accurate), only half of the inventors abandoned their project.[193] Furthermore, persistence was associated with high individual optimism and resulted in average losses.[194] On top of a more pronounced updating bias, a common source of asymmetric updating, attribution bias—namely, the tendency to take credit for success and attribute failure to bad luck[195]—is also stronger for long-term investments, since the longer time-horizon typically presents multiple opportunities for managers to chalk up failure to exogenous events.

Finally, evidence supports the phenomenon of managers' resistance to feedback with respect to long-term investments. Overconfident CEOs, who were found to have weak inclinations to amend material errors in their forecasts in light of corrective feedback, were especially unresponsive when the feedback related to forecasts with long time horizons.[196]

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190 *Id.*

191 *See id.* at 1477–78.

192 Thomas Astebro, *The Return to Independent Invention: Evidence of Unrealistic Optimism, Risk Seeking or Skewness Loving?*, 113 ECON. J. 226, 227–28 (2003).

193 *Id.* at 237.

194 *Id.* at 236.

195 *See e.g.,* Miller & Ross, *supra* note 182, at 213–18; Feather & Simon, *supra* note 181, at 173–75.

196 Guoli Chen et al., *Making the Same Mistake All Over Again: CEO Overconfidence and Corporate Resistance to Corrective Feedback*, 36 STRATEGY MGMT. J. 1513, 1530–31 (2015).

C. Illustrative Examples – Long-Term Bias and Hedge Fund Activism

In the previous Sections we have argued that overconfidence and optimism bias are present for corporate managers, that they are particularly likely to be concentrated in long-term projects, and that the usual factors that bridle or dampen the effects of overconfidence are also likely to be limited with long-term investments. In this Section we turn to a series of case studies that offer examples from three well-known companies (Yahoo, AOL and Navistar) where long-term investment decisions were arguably biased by overconfidence, and their most deleterious effects were ultimately interrupted by hedge fund activism. Section III.C.1 discusses the hiring of Marissa Mayer by the Yahoo board, her investments as Yahoo's CEO, activist Starboard Value's intervention to cut investments, and the eventual sale of Yahoo's core assets to Oath—a Verizon subsidiary led by Tim Armstrong, the former CEO of AOL. Section III.C.2 discusses Armstrong's $1 billion investment in his own long-term project, Patch, during his tenure as AOL's CEO—followed by the company's eventual sale due to an intervention by the same activist. Section III.C3 discusses Navistar's long-term investment in the novel EGR technology, advocated by then-CEO Dan Ustian, which resulted in Navistar becoming the target of three hedge fund activists, Ustian's ouster, and SEC charges levied against both Ustian and Navistar.

Any of these episodes could have been described as examples of short-termist interventions in long-term investments (and indeed they were so characterized at the time).[197] A closer

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[197] *See, e.g.*, Martin Lipton, *Lessons from the AOL Proxy Fight*, HARV. L. SCH. F. CORP. GOVERNANCE & FIN. REG. (June 22, 2012), https://corpgov.law.harvard.edu/2012/06/22/lessons-from-the-aol-proxy-fight/ [https://perma.cc/AQL9-L5PH] ("These results confirm that investors will not blindly follow the recommendation of ISS—when presented with a well-articulated and compelling plan for the long-term success of the Company, they are able to cut through the cacophony of short-sighted gains promised by activist investors touting short-term strategies."); Sanjay Sanghoee, *Yahoo's Mayer Should Take On Starboard*, FORTUNE (Oct. 23, 2014), http://fortune.com/2014/10/23/how-yahoos-mayer-should-take-on-

inspection, however, reveals that each of them also involved factors that betray the markers of managerial overestimation of (and overinvestment in) long-term projects. In each case, the significant potential upside was highly tempting; the inevitable vagueness of each initial plan fostered illusions of control, overestimation of managerial skill, and competition neglect. The managers became highly committed to their long-term visions and unrealistically invested in the project/strategy as contrary facts dribbled in. Importantly, in all cases the company was generating a significant internal cash flow that underwrote the long-term projects.

1. Marissa Mayer's Long-Term Plan for Yahoo

On the morning of July 11, 2012, Marissa Mayer, then a Google executive, entered Gibson Dunn & Crutcher's offices in Palo Alto, CA. Mayer was one of the four finalists for Yahoo's CEO position, and this was the final meeting with the Yahoo board before it made a final decision.[198] Going in, Mayer's odds at landing the job appeared long (to say the least). Yahoo's board was concerned that Mayer, who had recently been demoted from Google's search division and top management team, did not have the experience to manage a company of Yahoo's size: Mayer had never managed or even headed a division in a public company (she managed roughly 20 employees at Google), and she evidently had little managerial

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starboard/ [https://perma.cc/RG85-K8XH] ("Jeffrey Smith, who runs Starboard, is in the business of maximizing shareholder wealth in the short-term. But Mayer's job is to create value in the long-term, and in the Starboard version of this deal, she may have to give up the growth strategy that could be key to Yahoo's success."); Joe Nocera, *Out of the Spotlight, an Industry Copes With Crisis*, N.Y. TIMES (Nov. 28, 2008), http://www.nytimes.com/2008/11/29/business/29nocera.html?_r=0 [https://perma.cc/L66W-CVSW] ("Though no one at Navistar can prove it, they strongly suspect that the stock has been hammered because hedge funds, badly hurt during this phase of the financial crisis, have been forced to sell some of their more liquid positions to return money to exiting shareholders. I suspect this theory is correct, and it would be yet another way that fallout from the financial crisis has spread from New York to the rest of the country.").

[198] *See* CARLSON, *supra* note 21, at 229–30.

experience with accounting statements.[199] Furthermore, Mayer faced serious competition from within Yahoo: Ross Levinsohn, the interim CEO, had interviewed earlier that morning and had support from most of the members of Yahoo's board.[200]

Mayer and Levinsohn floated markedly different visions for Yahoo's future. Levinsohn offered the board a safe, low-risk low-reward plan—to take Yahoo out from competition with Google and Facebook by moving it to the content business.[201] Mayer, on the other hand, offered an ambitious long-term plan, that, if successful, could make Yahoo directly competitive with Google and Facebook.[202] While some board members initially preferred Levinsohn's safer plan,[203] others viewed it as overly conservative "small ball", preferring the high upside of Mayer's vision.[204] As the evening of July 11 wore on, the latter faction prevailed and Yahoo's board voted unanimously to name Marissa Mayer as CEO.[205]

There is little doubt that Yahoo's board, in selecting Mayer, opted for her high-risk/high-reward long-term plan. And, as noted above, a high volatility, big upside is one of the reasons why long-term investments can be vulnerable to overestimation. Indeed, even a little overconfidence on the board's side

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[199] *See id.* at 237–38 (An unnamed Google executive opined on Mayer's hire: "It will be a struggle. She's never managed more than ten to twenty people. She's a product person who hasn't managed sales, business development, human resources and all that." (internal quotation marks omitted)).

[200] *See id.* at 220 ("For the two months prior, the new chairman of Yahoo's board, Fred Amoroso, had made it clear that he was going to do everything he could to make sure Levinsohn and his team would be running the company for the foreseeable future.").

[201] *See id.* at 220–21.

[202] *See id.* at 229–31.

[203] *See id.* at 231 ("The directors who opposed Mayer—most vocally Amoroso, but also Brad Smith and David Kenny—argued that Levinsohn, with his 'media' strategy, had a better plan for Yahoo than Mayer and her 'products' strategy. They argued that Mayer may present a greater upside—she was more likely to come up with the next Facebook or Google Maps or Twitter—but that Levinsohn was the safer bet, a more guaranteed return.").

[204] *See id.* at 221 ("Harry Wilson, another director brought onto the board by Loeb, joined Wolf in his criticism of the deal as 'shortsighted.'").

[205] *See id.* at 233.

as to the plan's prospects to succeed could lead to great overestimation of the plan. A long-term investor in Yahoo—Citi's Mark Mahaney—expressed concerns about the risk involved:

> What we are a bit worried about is that by selecting Ms. Mayer, Yahoo! is explicitly pursuing an aggressive and bold Growth strategy, whereas we believe a Value strategy might be more appropriate.[206]

Furthermore, a long-term horizon could arguably have contributed to the overestimation of the relevance of Mayer's skills to the success of the plan, while neglecting potential downstream competition. Adding to the credibility of Mayer's plan was her user-focused experience at Google and her pedigree with search technology.[207] The plan's features were closely related to Mayer's skills: creating great apps for daily habits such as news, weather, email, and photos.[208] And most notably, the plan involved creating a new search application, which Mayer believed could significantly improve Yahoo's search market share and revenues.[209] Mayer and the board, however, did not predict how intensely competitive the apps market was about to become. When Yahoo Apps finally came out—as companies, startups, and individuals were all constantly producing iPhone applications—only two of Yahoo's apps made it to Apple's top 100 downloaded apps.[210]

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[206] Robert Hof, *What Google Veteran Marissa Mayer Can Do As Yahoo's New CEO*, FORBES (July 16, 2012), http://www.forbes.com/sites/roberthof/2012/07/16/surprise-googles-marissa-mayer-is-yahoos-new-ceo/#2cec2c8c7e0f [https://perma.cc/5Q3Z-8C9Y]. Overconfidence with respect to long-term projects affects investors only to a limited extent, if at all. For a discussion of the internal factors that affect managers' overconfidence and long-term bias see *infra* Section III.B.

[207] *See, e.g.*, Amir Efrati & John Letzing*, Google's Mayer Takes Over as Yahoo Chief*, WALL ST. J. (July 17, 2012), https://www.wsj.com/articles/SB10001424052702303754904577531230541447956 [https://perma.cc/GK32-KSS2] ("Yahoo's board selected Ms. Mayer because 'she stands for the user,' in contrast with a string of the company's previous CEOs who had little experience with consumer websites, said a person with direct knowledge of the company's CEO search.").

[208] *See* CARLSON, *supra* note 21, at 250–51.

[209] *Id.* at 285–86.

[210] *See id.* at 305.

Shortly after becoming Yahoo CEO, Mayer embarked on a shopping spree, spending hundreds of millions of dollars to acquire dozens of small startups.[211] Mayer relied on internal funds—proceeds that Yahoo was receiving predominantly from its holdings in Alibaba.[212] Yet, when Yahoo's initial acquisitions and investments did not produce the desired results, Mayer's solution was to double down with more investments.[213] Mayer announced to shareholders a potential plan to sell Yahoo's Alibaba holdings and use half of the proceeds to further invest in Yahoo's long-term plan.[214] This was an explicit deviation from Yahoo's initial plan, pre-Mayer, to distribute such proceeds to investors.[215]

On July 29, 2014, Eric Jackson published a Forbes column titled, *How Do You Solve a Problem Like Marissa?* advocating the need to stop Mayer from spending, and to require management to distribute the Alibaba proceeds to shareholders.[216] Jackson noted that Yahoo's market value was—incongruously—below that of the company's holdings in Alibaba, a fact suggesting that investors placed a *negative* value on Yahoo's core management.[217] Shortly after publication of Jackson's

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211 *See* Jackson, *infra* note 216.

212 *See id.*

213 *See id.*

214 *See, e.g.,* Yahoo! Inc., Current Report (Form 8-K) (Aug. 9, 2012) https://www.sec.gov/Archives/edgar/data/1011006/000119312512347591/d394429d8k.htm [https://perma.cc/5GXP-26KM] ("Ms. Mayer is engaging in a review of the Company's business strategy to enhance long term share-holder value. . . . This review process may lead to a reevaluation of, or changes to, our current plans, including our restructuring plan, our share repurchase program, and our previously announced plans for returning to shareholders substantially all of the after tax cash proceeds of the initial share repurchase under the Share Repurchase and Preference Share Sale Agreement we entered into on May 20, 2012 with Alibaba Group Holding Limited.").

215 *See id.*

216 Eric Jackson, *How Do You Solve a Problem Like Marissa?*, FORBES (July 29, 2014), https://www.forbes.com/sites/ericjackson/2014/07/29/how-do-you-solve-a-problem-likemarissa/33447f527b6d [https://perma.cc/GC4J-PL8K].

217 *See id.* ("[I]nvestors would rather get all of the cash coming back to Yahoo from the pending Alibaba IPO as well as what's already on the balance sheet, rather than see CEO Marissa Mayer and her management team

column, Mayer's management became the target of Starboard Value CEO Jeff Smith, a renowned activist.[218] Echoing Jackson's concerns in a letter to management, Smith warned against Mayer spending additional capital on acquisitions and implored her to distribute it to shareholders.[219] At first, Mayer cut a secret deal with Smith to cut costs and increase buybacks, in return for Smith's forbearance on a proxy fight.[220] Yet, following this agreement, Yahoo's expenses began to accelerate.[221] Indeed, despite Yahoo's weak results, Mayer did not seem to lose faith in her plan and its potential to rehabilitate Yahoo. On the company's Q3 2015 earnings call, Mayer reiterated her belief in her long-term plan for Yahoo stating, "[o]verall, I have very aggressive expectations for Yahoo's core business. We have the right talent, the right strategy, and the right assets to drive long-term sustainable growth for our

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spend it on value-destroying acquisitions."); *see also* Letter from Jeffrey C. Smith, Managing Member, Starboard Value LP, to Marissa Mayer, President & CEO, Yahoo! Inc. (Sept. 26, 2014), http://www.prnewswire.com/news-releases/starboard-delivers-letter-to-ceo-and-board-of-directors-of-yahoo-inc-277223182.html [https://perma.cc/BLK3-U3YL] ("This substantial valuation gap is likely due to the fact that investors currently expect Yahoo to continue its past practices of . . . using the cash proceeds from such sales to acquire businesses at massive valuations with seemingly little to no regard for profitability and return on capital.").

[218] Smith was not the first activist to target Yahoo. Dan Loeb, who brought Mayer to Yahoo, also pressured her to cut costs and return Alibaba money to shareholders. *See* CARLSON, *supra* note 21, at 276. But he exited Yahoo several months earlier—taking on Mayer's offer to greenmail him. *See id.* at 276 ("Mayer went to Loeb and told him that Yahoo would buy forty million of his Yahoo shares at $29 per share. That was more than twice what he paid for them in the summer of 2011. The deal would reduce Third Point's stake in Yahoo below 2 percent, forcing Wolf, Wilson, and Loeb to step down from the board, per Third Point's settlement from the year prior.").

[219] *See* Letter from Jeffrey C. Smith, Managing Member, Starboard Value LP, to Marissa Mayer, *supra* note 217.

[220] *See* Douglas MacMillan, *Yahoo's Marissa Mayer Stumbled After Secret Truce with Investor*, WALL ST. J. (June 17, 2016), http://www.wsj.com/articles/yahoos-marissa-mayer-stumbled-after-secret-truce-with-prodding-investor-1466174597 [https://perma.cc/DP6Q-9NUN].

[221] *See id.*

investors."[222] Then, when the balance of its investments turned out to be unsuccessful, Mayer embarked on a new, "bet-the-company" gambit called Project Index, a mobile search application that Mayer believed would make Yahoo competitive with Google.[223]

Four years down the road and close to $3 billion in spending on over fifty acquisitions later,[224] the plan did not produce the growth investors and management hoped for. Quite to the contrary, Yahoo's quarterly reports for Q1 2016 were exceptionally weak, showing declines across the board in Yahoo's businesses' market share and profitability.[225] On April 27, 2016, Yahoo reached a deal with Starboard's Smith to nominate four members to the board.[226] And, in the end, it was Smith who successfully pushed for Yahoo to sell its core business.[227] On July 25, 2016 Yahoo announced it closed a deal with Verizon in which Yahoo would sell its core businesses to Verizon for (a relatively modest) $4.8 billion.[228]

Whether Yahoo could have been saved had Mayer acted differently we can never know for sure. While there is no doubt that Yahoo had long been a sinking ship that perhaps no one (including Mayer) could have righted, it is likely that Mayer would have forged ahead with her turnaround plan absent the

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[222] *Edited Transcript of YHOO Earnings Conference Call or Presentation*, THOMSON REUTERS STREETEVENTS (Oct. 21, 2015), https://web.archive.org/web/20151105015501/http://finance.yahoo.com/news/edited-transcript-yhoo-earnings-conference-055111175.html [https://perma.cc/7A2X-WMUG].

[223] *See* MacMillan, *supra* note 220.

[224] *See* Sophie Kleeman, *Here's What Happened to All 53 of Marissa Mayer's Yahoo Acquisitions*, GIZMODO (June 15, 2016), https://gizmodo.com/heres-what-happened-to-all-of-marissa-mayers-yahoo-acqu-1781980352 [https://perma.cc/MQN5-BDAN].

[225] *See* Yahoo! Inc., Quarterly Report (Form 10-Q), at 4–8 (May 9, 2016), https://www.sec.gov/Archives/edgar/data/1011006/000119312516584244/d152715d10q.htm [https://perma.cc/VC2X-8P94].

[226] *See* MacMillan, *supra* note 220.

[227] *See id.*

[228] *See* Vindu Goel, *Verizon Announces $4.8 Billion Deal for Yahoo's Internet Business*, N.Y. TIMES (July 25, 2016), https://www.nytimes.com/2016/07/26/business/verizon-yahoo-sale.html [https://perma.cc/4CV6-ESKX].

Starboard intervention.[229] In a telling interview Mayer gave shortly before Yahoo was sold, Mayer refused to concede to her mistakes. Rather, she insisted, "[w]hat's needed . . . is a little more time."[230] Time, along with Mayer's long-term plan, she argued, would solve the problem.[231] In this unconquerable faith one can discern many of the seeds of long-term bias (as we have defined it). Mayer's ambitious, high potential upside plan for Yahoo arguably acted to magnify the influence of overconfidence bias. In addition, due to the distant finish line, the inevitably vague nature of the plan, building it around Mayer's skills and ignoring the role of luck and potential competition arguably led to an even higher level of overconfidence. Finally, Mayer's determination to stick to her guns, ignoring negative feedback and a mounting trove of negative data, is also symptomatic of long-term bias, where learning from feedback is limited by managers' attachment to the project.

2. Tim Armstrong, AOL, and Patch

In an interesting (if ironic) twist, Yahoo's core assets (now held by Verizon) would come to be managed by Tim Armstrong, a one-time salesperson who became the CEO of AOL (prior to its acquisition by Verizon). Under Armstrong's initial leadership, Oath—a Verizon subsidiary—managed the combined assets of Yahoo and AOL.[232] Similar to Mayer,

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[229] *See* Todd Spangler, *Yahoo's False Prophet: How Marissa Mayer Failed to Turn the Company Around*, VARIETY (May 24, 2016), https://variety.com/2016/digital/features/marissa-mayer-yahoo-ceo-1201781310/ [https://perma.cc/K6T5-2NXZ] ("Others say Mayer refuses to admit her failures, a stick-to-her-guns hubris that has made Yahoo slow to correct course when things weren't working.").

[230] *See* Goovaerts, *supra* note 25.

[231] *See* Swisher, *supra* note 1 (Charlie Rose asked Ms. Mayer "here we are . . . [w]hen you look at what has happened, what did you do wrong?" She responded: "well, . . . I don't think the story has yet played out. . . . A lot of tech turnaround adds we do take five, six, seven years . . . ."); MacMillan, *supra* note 25 ("We have a three-year strategic plan. I can see how it will work and how we can actually get to a successful turnaround of Yahoo . . . .").

[232] In September 2018, Armstrong and Verizon parted company. *See* Sarah Krouse, *Verizon's Internet Boss Tim Armstrong in Talks to Leave*,

Armstrong left Google to save AOL, which, like Yahoo, was listing at the time he arrived. Saving AOL was a significant ask, but Armstrong believed that AOL was undervalued, could benefit from a big bet, and was producing sufficient cash from its internet access business to invest in a necessary turnaround.[233] Furthermore, Armstrong believed he had a winning card—Patch, a local news web platform that Armstrong had created while at Google.[234] The application's core idea was somewhat akin to the personalized news approach of platforms like Facebook, but was to be differentiated by creating a local community of users and a hub for business owners—one of the so-called "last white spaces on the Internet."[235]

Armstrong believed that Patch would provide the growth trajectory that would save AOL, and accordingly, he conditioned his acceptance of the offer to run AOL on Patch's acquisition.[236] After joining AOL, Armstrong started pouring money into the project. Under his and the AOL board's stewardship, AOL's investment in Patch neared $500 million.[237] And, as with Mayer, Armstrong's use of internal funds soon became the target of Starboard Value CEO Jeff Smith. On January 13, 2012, Armstrong and AOL management met with Smith and his team, who wanted to discuss AOL's Patch expenses.[238] Smith came prepared with a detailed presentation: running the numbers for Patch, he argued, even under best-case scenarios, showed that Patch eventually would not cover the costs of salaries it was currently paying its employees.[239] Armstrong's response presentation included a big-picture plan—

WALL ST. J. (Sept. 7, 2018), https://www.wsj.com/articles/verizons-internet-boss-in-talks-to-leave-1536321413 [https://perma.cc/WF5U-FN4L].

[233] *See* Nicholas Carlson, *The Story Behind Why AOL CEO Tim Armstrong Fired an Employee In Front Of 1,000 Coworkers*, BUS. INSIDER (Nov. 6, 2013), http://www.businessinsider.com/tim-armstrong-patch-aol-2013-10?op=1 [https://perma.cc/TDJ3-HJ6V].

[234] *Id.* Additionally, Armstrong already put some of his own money into Patch and had an old friend, Jon Brod, become CEO of the company. *See id.*

[235] *Id.*

[236] *Id.*

[237] *See id.*

[238] *Id.*

[239] *See id.*

literally drawn on a white board with many boxes and arrows, but no numbers or financial details—a mixed-media composition that Smith found disconcerting.[240]

After three more meetings on Patch failed to reach a resolution, and in what has become a common ritual for hedge fund intervention, Smith demanded board representation.[241] When Armstrong refused, Starboard commenced a proxy fight, which ultimately faltered.[242] Martin Lipton was quick to declare the result as a victory of a "well developed" and "well-articulated" long-term management strategy over a short-term, short-sighted, hedge fund strategy.[243] As Lipton explained in a client memo, the AOL victory showed that when management presents a "compelling long-term strategy," investors "are able to cut through the cacophony of short-sighted gains promised by activist investors touting short-term strategies."[244]

Yet, in order to win the proxy fight, Armstrong was forced to cut a deal, making a promise that Patch would turn profitable by the end of 2013, or it would be cut loose.[245] Following this promise, Armstrong became even more involved in the product, visiting Patch offices at least once a week and actively sharing his ideas with the product designers and with creative director Abel Lenz.[246] As the time passed, however, it became increasingly clear that Patch would not deliver on Armstrong's promise. Armstrong nevertheless refused to

[240] *Id.* ("As an activist investor, Smith has to meet with management teams all the time. For him, it's obvious when they know how their core businesses fit together with the businesses they are trying to grow and develop. But looking at Armstrong's board, full of arrows going all over the place, it seemed to Smith that Armstrong and his team were just grasping at straws, hoping that something they threw at the wall would stick.").

[241] *Id.*

[242] *See id.*

[243] *See, e.g.*, Lipton, *supra* note 197 ("The victory represents a clear and powerful message that a well-developed and well-articulated business strategy for long-term success will be supported by investors notwithstanding activist generated criticism and ISS support.").

[244] *Id.*

[245] *See* Carlson, *supra* note 233.

[246] *Id.*

acknowledge what his team was seeing.[247] And, when AOL's CFO Arthur Minson, who played a key role in winning the proxy fight, became vocal about his skepticism of Patch, Armstrong fired him.[248] Eventually, however, in August 2013, close to the looming deadline, Armstrong finally realized that there was no way around cutting Patch costs significantly.[249] This defeat took an exceptional emotional toll on him.[250] In an incident that would become notorious around Silicon Valley, Armstrong impulsively fired Abel Lenz during a company conference call involving around 1,000 coworkers.[251] The event, which was later described as "probably the most intense moment you'll ever hear during a workplace conference call,"[252] was received as a negative sign of Armstrong's leadership temperament.[253] On January 15, 2014, AOL relinquished its control in Patch.[254] The day after the announcement, AOL's market price rose 8%.[255] Investors evidently appreciated Armstrong's commitment to his promise.[256] In many

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[247] *Id.* ("Armstrong's apparent stubbornness and blindness with respect to Patch, moreover, continued to cause significant friction between him and his senior team.").

[248] *Id.* ("Minson was quite vocal about his skepticism about Patch. And in February 2013, Armstrong suddenly fired him.").

[249] *Id.*

[250] *See id.* (That Friday in August, Armstrong was finally making a decision that he had needed to make for a long time. And it was killing him.").

[251] *See* Carlson, *supra* note 32.

[252] *Id.*

[253] *See* Carlson, *supra* note 233 ("[M]ost people across the country and world saw it as gratuitous and humiliating: What's wrong with Tim Armstrong, people wondered? What kind of CEO fires some poor guy in front of all his colleagues? What did this say about what was going on at AOL?").

[254] *See* Nicholas Carlson, *The End of an Error: AOL Just Disposed of Controlling Interest in Patch*, BUS. INSIDER (Jan. 15, 2014), http://www.businessinsider.com/aol-just-disposed-of-controlling-interest-in-patch-2014-1 [https://perma.cc/4JSC-42FG].

[255] Nicholas Carlson, *Tim Armstrong Finally Got Rid Of Patch, And Wall Street Loves It*, BUS. INSIDER (Jan. 16, 2014), https://finance.yahoo.com/news/tim-armstrong-killed-baby-wall-181300569.html[https://perma.cc/RGZ4-9ZUM].

[256] *See* Carlson, *supra* note 254 ("Patch was always a mistake. But today, Armstrong deserves tons of credit for honoring a promise he made to

respects, though Smith and Starboard lost the proxy fight, they won the war.[257] Without Starboard's intervention, Armstrong likely would not have made his promise about Patch, and almost certainly would have soldiered ahead before giving up the idea of Patch becoming the engine of AOL growth.[258]

Within our framework, the investment in Patch demonstrates the vulnerability of long-term projects to overconfidence, and especially the difficulty their initiators confront in responding to negative data, including the unpleasant task of abandoning ship when needed. Armstrong became highly attached to Patch, and to the extent that he did not compute the bottom-line profitability, resisted incoming negative information, did not learn from feedback events, and—close to the end—became defensive and vindictive, losing (at least momentarily) his usual superb leadership skills. Looking back at the Patch episode with new perspective, Armstrong enumerated his mistakes, confessing regret for not looking at incoming data and proceeding too fast with the project:

> [T]he mistake I made was going . . . too bullish down a path without making sure those early positive metrics were actually coming true in all the other markets. . . . The criticisms we were getting, a lot of them were probably accurate. We could have done a better job out of the gates narrowing that focus. That's really helped me since then, I think, improve my style of management but also just the judgment piece of like how to correctly make judgments about things overall. [259]

shareholders – especially since he has always had a deep emotional connection to the Patch project.").

[257] *See* David Carr, *AOL Chief's White Whale Finally Slips His Grasp*, N.Y. TIMES (Dec. 15, 2013), http://www.nytimes.com/2013/12/16/business/media/aol-chiefs-white-whale-finally-slips-his-grasp.html?_r=1 [https://perma.cc/3WJJ-YEFG] ("The insurgents lost the war, but turned out to be right.").

[258] *See C*arlson, *supra* note 254 ("We're pretty sure that if he had his way, AOL would still be investing in Patch. But he made a promise, and he stuck to it.").

[259] Recode Staff, *Full Transcript: Oath CEO Tim Armstrong on Recode Media*, RECODE (Sept. 3, 2017),

3. Dan Ustian, Navistar & EGR Technology

With no engineering background, but nonetheless climbing the ladder from within, Dan Ustian became the CEO, President, and Chairman of the Board of Navistar Inc.—an international manufacturer of trucks, busses and diesel engines—in 2004.[260] Under Ustian's leadership Navistar became a poster child for R&D investment and growth—embarking in new directions, such as military vehicles and school buses, with global reach and technological innovation.[261] Ustian's commitment to innovation and long-term growth was so strong, in fact, that some suggested he appeared to be managing an internet incubator rather than a truck and engine company.[262]

In 2001, the Environmental Protection Agency (the "EPA") issued a new regulation that would require the industry to meet a new, stricter quality standard for nitrogen dioxide pollutant—one that would have to be met by 2010.[263] Rather than using the industry standard Selective Catalytic Reduction ("SCR") technology, which Navistar's competitors were all relying on to meet the new regulations, Ustian wanted Navistar to develop a novel, unique technology.[264] The new technology

https://www.vox.com/2017/9/3/16243970/transcript-oath-ceo-tim-armstrong-aol-patch-verizon-yahoo-recode-media [https://perma.cc/9WDX-MLNX].

[260] *See* Joann Muller, *Death By Hubris? The Catastrophic Decision That Could Bankrupt A Great American Manufacturer*, FORBES (Aug. 2, 2012), https://www.forbes.com/sites/joannmuller/2012/08/02/death-by-hubris-the-catastrophic-decision-that-could-bankrupt-a-great-american-manufacturer/#37a35fe06fbb [https://perma.cc/VUS4-VKN6].

[261] *See* Joe Cahill, *Suits Can Innovate, Too*, CRAIN'S CHI. BUS. (Mar. 31, 2012), http://www.chicagobusiness.com/article/20120331/ISSUE01/303319959/suits-can-innovate-too [https://perma.cc/F4B7-L4R7] ("Navistar CEO Dan Ustian churns out new products so fast, you'd think he was running an Internet incubator, not a 175-year-old company that once made the McCormick reaper.").

[262] *Id.*

[263] *See* Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, 66 Fed. Reg. 5,002 (Jan. 18, 2001) (to be codified at 40 C.F.R. pts. 69, 80 and 86).

[264] *See* Muller, *supra* note 260.

that Ustian envisioned—Exhaust Gas Recirculation—had clear advantages: it was less costly to apply and, more importantly, it saved drivers the need to keep an additional tank in the truck.[265] If successful, EGR could provide Navistar with a significant competitive advantage[266]—a typical Ustian obsession (according to Navistar employees).[267] In 2007 Navistar officially declared that it would pursue EGR technology rather than implement SCR, which would "come with a steep cost to our customers."[268] Accordingly, EGR became a central piece of one of the three pillars in Navistar's long-term growth strategy.[269]

Because of EGR's novelty, there was a risk that it might not meet the EPA standard in time (or ever), but Ustian believed the engineers could achieve needed improvements by

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[265] *Id.*

[266] *See* Press Release, Navistar Int'l Corp., International Trucks and Engines Will Comply with 2010 Emissions Standards without SCR (Oct. 31, 2007), http://ir.navistar.com/releasedetail.cfm?releaseid=272413 [https://perma.cc/QQ8U-ZLJK] ("'While SCR is a means to achieve the NOx reduction requirement for 2010, it comes with a steep cost to our customers,' said Daniel C. Ustian, Navistar chairman, president and chief executive officer. 'Our ability to achieve our goals without adding customer cost and inconvenience is a competitive advantage for International.'"); Charlie Morasch, *Digging Out: Navistar Says Adding SCR to its Trucks and Replacing its CEO Will Clear the Path Forward*, LAND LINE MAG., Oct. 2012, http://www.landlinemag.com/magazine/2012/oct/Section2/digging-out.aspx [https://perma.cc/TFZ3-B52T] ("Navistar, Allen said, wanted to have a long-term competitive advantage for its customers and against its competitors. Allen said such lasting advantages are a rarity, particularly in trucking, where innovations are quickly emulated.").

[267] *See* Muller, *supra* note 260 ("Above all, say those who worked closely with him, Ustian is obsessed with avoiding what happened to companies like Motorola or RIM, which notoriously lost their market leadership to more innovative rivals.").

[268] Press Release, Navistar Int'l Corp., *supra* note 266.

[269] *See, e.g.*, Navistar International Corporation, Annual Report (Form 10-K), at 1 (Dec. 21, 2010) https://www.sec.gov/Archives/edgar/data/808450/000119312510285754/d10k.htm [https://perma.cc/7FLW-5W2R] ("Our long-term strategy is focused on three pillars: I. Great Products: . . . [f]ocusing on engine research and development in order to have a competitive advantage using Exhaust Gas Recirculation ('EGR') and other technologies for compliance with 2010 emissions standards . . . .").

2010. Ustian's confidence was so high, in fact, that the company developed no serious backup plan, as reflected in his answer to a question during an earnings conference call: "Plan B is we're going to make Plan A work."[270] Furthermore, when difficulties with the EGR undertaking began to present themselves early on, Ustian was not open to discuss them with his engineers. As a former executive would later recall:

> Dan is telling his technical people, 'You've got to deliver,' and they're saying, 'We don't know how, but we'll try,' says the former executive. There was a lot of tension in the technical community, from the scientists on up to the managers, about whether we should be agreeing to something we don't know how to do. Dan didn't want to hear any of it. 'You're going to get it done.' He's a positive thinker. He doesn't like negative thinking.[271]

This behavior raised concerns when Navistar began burning cash on EGR at growing, alarming rates.[272] Such expenses, Ustian reasoned, were necessary for Navistar's successful achievement of long-term growth.[273] Accordingly, despite a

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[270] Consolidated Amended Complaint at 38, Construction Workers Pension Trust Fund – Lake County and Vicinity v. Navistar Int'l Corp., No. 1:13-cv-2111 (N.D. Ill. Oct. 10, 2013). *See also* Muller, *supra* note 260 ("The company had banked so many credits in earlier years that it could lawfully use them, in lieu of fines, all the way until this year. But rather than buying time for a plan B, Ustian, who was convinced a breakthrough was just around the corner, plowed forward with his EGR plan, full steam ahead.").

[271] Muller, *supra* note 260.

[272] *See* Joann Muller, *Navistar Starts Paying The Piper For Its Costly Strategic Mistake*, FORBES (Aug. 31, 2012), http://www.forbes.com/sites/joannmuller/2012/08/31/navistar-starts-paying-the-piper-for-its-costly-strategic-mistake/#4376b008431d [https://perma.cc/RPQ9-HE68] ("[T]he primary concern, says Gimme Credit analyst Vicki Bryan, is the rate at which Navistar is burning cash.").

[273] *See* Press Release, Navistar Int'l Corp., Navistar Reports Solid 4Q, Year-End Net Income as Weakened Truck Market Continues (Dec. 21, 2009), https://navistar.gcs-web.com/news-releases/news-release-details/international-trucks-and-engines-will-comply-2010-emissions [https://perma.cc/7G75-3LDQ] ("'Despite current economic challenges, we have remained focused on our three-pillar strategy which includes being profitable in the toughest of times while investing in our future for

significant decline in Navistar's share price in 2008, Ustian's confidence remained intact: the low market price was due to hedge funds liquidating their positions to meet recession redemptions and margin calls.[274] Similarly, when the company's EGR efforts continued to flag and share price again declined 40% in 2012, Ustian's answer was again moored to innovation: "We've got some more breakthroughs coming."[275] Wall Street, he argued, was suffering from short termism.[276] Some analysts, however, believed that the decline in market price was not driven by short-termism but rather a lack of faith in management. As the value of the shares sank below $27, reflecting a multiplier of sales below 0.13 (less than a fourth of the median multiplier of its competitors), Patrick Nolan, an analyst for Penn Capital who sold its position in Navistar, opined to Bloomberg: "It's a high-quality company with a management

profitable growth,' said Daniel C. Ustian, Navistar's chairman, president and chief executive officer. . . . 'We believe that our customer-friendly solution positions our products with a significant competitive advantage,' . . . . 'The momentum established in the wake of these accomplishments positions us well for long-term success and to take on the challenges that 2010 will pose for all in our industry.'"); *see also* Cahill, *supra* note 261 ("For Mr. Ustian, the answer is innovation: 'We've got some more breakthroughs coming.'").

[274] Nocera, *supra* note 197 ("Though no one at Navistar can prove it, they strongly suspect that the stock has been hammered because hedge funds, badly hurt during this phase of the financial crisis, have been forced to sell some of their more liquid positions to return money to exiting shareholders. I suspect this theory is correct, and it would be yet another way that fallout from the financial crisis has spread from New York to the rest of the country.").

[275] *See* Cahill, *supra* note 261 ("Ustian's innovations haven't helped Navistar's stock. Wall Street focuses on short-term earnings performance and truck sales forecasts. Thanks to a recent earnings shortfall and worries about the new truck engine, shares are down 40 percent from last May's 52-week high and trade at a discount to its industry peers. Corporate raider Carl Icahn is pressuring the company into a merger.").

[276] *See id.*

issue."[277] Indeed, by this time Navistar had become the target of three activists.[278]

On July 6, 2012, as a result of the combined pressure of a declining share value, hedge fund activism and mounting costs of non-compliance, Ustian finally gave up on EGR, announcing that the company would move to SCR technology.[279] After ten years of working on EGR and $700 million in spending[280], for the market it was too little too late. Navistar's shares fell an additional 15% that day, and the company faced a real risk of bankruptcy.[281] On August 27, 2012 the Navistar board, which had awarded Ustian with a large compensation package the year before, ousted him.[282] Activist Carl Icahn however, was not quite done. Icahn believed that any board that allowed this to happen could not shape Navistar's future and navigate it safely out of the bankruptcy risk the company now faced. On September 9, 2012 Icahn released an open letter to the board of directors demanding board seats.[283] On July

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[277] Mark Clothier & Alex Barinka, *Navistar Turns Target After Poison Pill Adopted: Real M&A*, BLOOMBERG (June 22, 2012), http://www.bloomberg.com/news/articles/2012-06-21/navistar-turns-target-after-poison-pill-adopted-real-m-a [https://perma.cc/VCL2-99U7].

[278] *See* Scott Malone, *Embattled Navistar Adopts Poison Pill as Big Investors Circle*, REUTERS (June 20, 2012), http://www.theglobeandmail.com/globe-investor/embattled-navistar-adopts-poison-pill-as-big-investors-circle/article4356698/ [https://perma.cc/T8PY-QLM6].

[279] *See* Kate Macarthur, *Navistar's Plan B Offers Little Confidence in its Future*, CRAIN'S CHI. BUS., (July 9, 2012), http://www.chicagobusiness.com/article/20120706/NEWS05/120709911/navistars-plan-b-offers-little-confidence-in-its-future [https://perma.cc/5TCL-66YY].

[280] *See* Jonathan Stempel & Suzanne Barlyn, *SEC Charges Navistar, ex-CEO with Misleading Investors*, REUTERS (Mar. 31, 2016), https://www.reuters.com/article/us-navistar-intl-sec/sec-charges-navistar-ex-ceo-with-misleading-investors-idUSKCN0WX2GI [https://perma.cc/4QXG-M4SS].

[281] *See* Macarthur, *supra* note 279.

[282] Soyoung Kim, *Navistar Board Ousts CEO Ustian After Failed Engine Bet*, REUTERS (Aug. 27, 2012), https://www.reuters.com/article/us-navistar-ceo/navistar-board-ousts-ceo-ustian-after-failed-engine-bet-idUSBRE87Q0Y620120827 [https://perma.cc/8H6A-W5ME].

[283] Letter from Carl Icahn to Navistar Int'l Corp. Shareholders (Sept. 9, 2012), https://www.prnewswire.com/news-releases/carl-c-icahn-issues-

15, 2013 Navistar agreed to let Icahn and Mark Rachesky appoint two directors each to Navistar board.[284] The board also raised the company's poison pill threshold from 15% to 20%.[285] In response, Navistar's shares rose 10%.[286]

Ustian's fate at Navistar bears markers of this Article's substantive thesis. Like Mayer and Armstrong, Ustian was drawn to the potential high upside of the EGR project—a development which could provide Navistar with a significant competitive advantage. The long-time horizon made Ustian so confident that Navistar could succeed in developing the technology that he deliberately neglected developing a Plan B.[287] Along the road, Ustian became increasingly invested in the project, so much so that he ignored mounting data and engineers' concerns, and dismissed the anemic market value that investors accorded Navistar, which to him was simply a reflection of short-termism.[288]

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open-letter-to-board-of-directors-of-navistar-international-corporation-169120616.html [https://perma.cc/4SFE-ATQT].

[284] *See* Liz Hoffman, *Navistar Deals with Ichan, Rachesky to Avoid Proxy Fight*, LAW 360 (July 15, 2013), http://www.law360.com/articles/457245/navistar-deals-with-icahn-rachesky-to-avoid-proxy-fight [https://perma.cc/4GZW-THQJ].

[285] *Id.*

[286] *See* Rohit Tirumala Kumara et al., *Navistar Avoids Proxy Battle by Giving Icahn, Rachesky More Say*, REUTERS (July 15, 2013), https://www.reuters.com/article/us-navistarinternational-board-proxy/navistar-avoids-proxy-battle-by-giving-icahn-rachesky-more-say-idUSBRE96E0UZ20130715 [https://perma.cc/7EG6-42YY].

[287] *See* Muller, *supra* note 260.

[288] Furthermore, the SEC has charged Navistar and Ustian for misleading investors about the likelihood of EGR's success in the company's 2011 filings. The company has settled with no admission of wrongdoing, while Ustian is still in settlement discussions with the SEC. *See* Litigation Release, Sec. & Exch. Comm'n, Securities and Exchange Commission v. Daniel Ustian, (Mar. 31, 2016) https://www.sec.gov/litigation/litreleases/2016/lr23507.htm [https://perma.cc/SHR8-7K4Z]**;** Eric Miller, *Former Navistar CEO Daniel Ustian, SEC Ready to Discuss Settlement,* TRANSPORT TOPICS (Sept. 5, 2017), http://www.ttnews.com/articles/former-navistar-ceo-daniel-ustian-sec-ready-discuss-settlement [https://perma.cc/3U8M-Y9UC]. *See also* Catherine M. Schrand & Sarah Zechman, *Executive Overconfidence and the Slippery Slope to Financial Misreporting*, 53 J. ACCT. &ECON. 311, 311 (2012) (finding that "[o]verconfident executives are more likely to exhibit an optimistic bias and thus are

IV. IMPLICATIONS

The foregoing Parts have illustrated, using both academic literature and a series of case studies, our hypothesis that corporate managers can suffer from an overlooked form of optimism bias that disproportionally affects their assessments of long-term projects. In this Part, we situate our hypothesis in the larger debate surrounding activism and short-termism, analyze how it plausibly interacts with long-termism, and posit several business and legal implications of our hypothesis.

A. Interacting Biases in Capital Markets

As noted in the introduction, our framework and argument do not dismiss the possibility that short-term biases exist and are durable in capital markets.[289] Quite the contrary: the long-term bias phenomenon we identify does much to resolve the curious paradox (articulated above) about how short-term bias could ever persist in competitive capital markets with professional investors and fund managers. In particular, once one introduces the conceptual framework of long-term bias it becomes easier to understand why short-term bias has survived over time, through economic booms and busts. Under the right circumstances, short-termism can serve as an effective counter ballast for limiting and bridling long-termism (and, vice versa).

To get a feel for how this interaction might work, consider our previous example from Tables 2 and 3, and assume that the manager values the short-term project at its actuarial value (with equal 50% probabilities of success/failure), but she optimistically accords a higher assessment (of 60%) to the long-term project. The manager thus correctly assesses the ST project to have an expected value of 260 and evaluates the LT project to have expected value of 300 (reflecting upward bias). If left to her own devices, she will thus honestly, but erroneously, pursue the LT project. Now suppose an activist investor

more likely to start down a slippery slope of growing intentional misstatements").

[289] *See supra* notes 13–18 and accompanying text.

who owns a 20% stake of the company (and exhibits no biases) recognizes the manager's mistake and is considering launching a proxy contest to force a change of strategy to pursue the ST project. Suppose further that the activist will incur a non-recoverable cost of 3 in order to execute the contest, which (for simplicity) we assume will be 100% effective. If the activist is successful, she will gain a value of 52 (or 20% of the ST project's payoff of 260) and give up a value of 50 (20% of the "true" actuarial value of the LT payoff of 250), producing a gross gain of 2. The activist would nevertheless abstain from launching the proxy contest, however, since her gross gain (2) is below her cost of launching the contest (3). She would know with certainty that the manager was long-term biased, but the private costs of doing anything about it would be prohibitive.

Suppose instead that in addition to the manager's long-term bias, the activist was herself biased in the opposite direction—in favor of the ST project. Specifically, suppose she assesses the ST project holds a 60% success probability (while still judging the LT project's success accurately at 50%). Now the activist would perceive the ST project to be worth 272 in expected value, so that a successful proxy contest would deliver her a (perceived) payoff of 54.4 (20% of 272), less a value of 50 (20% of the LT payoff of 250), thereby netting her a gross gain of 4.4. In this case, the activist will find it profitable to launch the proxy contest, thereby increasing firm value (albeit by less than she perceives) and delivering greater overall value to all shareholders. Note that if the manager were not biased to begin with, then the activist's short-termism would potentially be a negative force (rather than a positive one). To be sure, the interaction of long- and short-term biases probably does not always result in perfectly optimal outcomes, but by plausibly interacting in this way, short-term bias and long-term bias will tend to mitigate one another's greatest shortcomings.

Our framework also helps to explain other puzzling observations. For example, consider a positive market response to an announcement that a hedge fund activist has purchased company stock and is engaging management. This empirical result, which has been confirmed in numerous studies, suggests that investors view the intervention as valuable.[290] Critics of hedge fund activism, however, have argued that this result suggests that investors are also short-sighted, that is, they are happy to receive higher payouts in the short-term, while ignoring the long-term consequences.[291] Under ordinary circumstances, this interpretation would follow only if financial markets were persistently incapable of pricing the long-term effect of activism, an assumption that seems somewhat of a stretch.[292] Furthermore, the market response to activism varies significantly across firms, and is sometimes negative.[293] Why would similarly situated short-term investors respond negatively to hedge fund engagements in some firms and positively in others? Under this Article's account, capital market price responses might also be due to management side factors. For example, a positive market response could reflect a much-needed derailing of an undesirable long-term project that was itself the artifact of long-termism. More generally, the account offered here predicts that market responses might vary across firms, activists, and investments—depending on the extent of long-term (management-side) bias and short-term (investor-side) bias that are involved in any particular situation.[294]

B. Business Implications

The framework developed above—and the symbiotic interaction between long-termism and short-termism—also have several implications for business operations. We chronicle three of them here: business investment, investor payout, and firm governance.

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290 *See* Brav et al., *Firm Performance*, *supra* note 16, at 1730.

291 *See*, *e.g.*, Strine, *Who Bleeds, supra* note 5, at 1894–1895.

292 *See, e.g.*, Bebchuk et al., *supra* note 10, at 1123 ("For hedge fund activism to reduce the wealth of shareholders in the long term, it must be the case that (i) the elevated stock-price levels following 13D filings represent inefficient market pricing that fails to perceive the expected long-term costs of the intervention . . . .").

293 *See* Coffee & Palia, *supra* note 10, at 584.

294 *See* Barzuza & Talley, *supra* note 48, at 8.

1. Overinvestment

Short-termism has been a constant concern of corporate America's policymakers, lawyers, academics, and business commentators. Under conventional wisdom short-term gains always come at the expense of superior long-term investments and growth, and accordingly impose significant efficiency costs on firms and investors. As leading corporate lawyer Martin Lipton harshly warns: "In what can only be considered a form of extortion, activist hedge funds are preying on American corporations to create short-term increases in the market price of their stock at the expense of long-term value."[295]

Yet, as we have argued above, managers often have incentives to overinvest in long-term projects. As a result, the widely held assumption that short-term pressure always comes at the expense of long-term performance and growth seems suspect. Short-term pressures (even less than rational ones) could limit overconfident long-term investment and consequently improve long-term performance and growth. Thus, the finding that hedge fund activism has led to less investment in R&D—which is often said to be one of the strongest pieces of evidence against hedge fund activists—by itself does not imply that activism is either damaging or valuable to shareholders.[296] Rather, it raises an empirical question—what type of investments are less likely to withstand activism: desirable or undesirable ones? If R&D levels were excessive due to long-term bias, and activism reduces inefficient overestimated investments, then short-termism would contribute to long-term profitability and growth.[297] Consistent with this possibility, two recent studies find that while activism reduces investment in R&D and CAPEX in general, it also leads to

[295] Lipton, *supra* note 6.

[296] *See* Coffee & Palia, *supra* note 10, at 576.

[297] Coffee & Palia acknowledge the potential argument that R&D level was excessive. *See id.* at 550. Yet, they argue, since managers are compensated for long-term performance, they have no incentive to overinvest. *Id.* Yet, overconfidence is not cured by incentive-based compensation. Since overconfident managers believe in their long-term projects, long term compensation will incentivize them to invest more rather than less in those long-term projects. *See* Malmendier & Tate, *supra* note 34, at 2662.

increased returns on assets, and higher output measures (such as more patent registrations and citations).[298]

To be sure, some others have posited that short-termism could play a role in limiting overinvestment. Yet, the argument that managers overinvest typically relies on a variety of agency cost theories. For instance, the common overinvestment theory of empire building posits that managers garner personal benefits from increasing the size and scope of their firms, which they achieve via investments and acquisitions. First, the argument goes, by purchasing other companies, managers can arguably increase their own compensation. Second, they increase their visibility and importance. Third, they increase the company's diversification. Yet, as Coffee and Palia argue, executive compensation today ties compensation to firm performance.[299] Thus, if empire building harms the company, executives should be incentivized not to pursue it. The long-termist approach we posit, however, does not turn on agency cost theory, and thus is less susceptible to this criticism. And, since it is driven by overconfidence, incentive-based compensation does not necessarily mitigate the type of long-termism we have presented. Quite the contrary, overconfident managers—who genuinely (but mistakenly) believe in the quality of their long-term investments—are encouraged to invest even more when their compensation is tied to firm value.[300] Indeed, these managers typically negotiate a compensation package that is sensitive to firm value.[301]

2. Investor Payouts

Another criticism of activist hedge funds concerns the pressure they frequently exert to increase shareholder payouts. Fearing these pressures, it is argued, firms sacrifice R&D and

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[298] *See* Brav et al., *Real Effects*, *supra* note 14, at 2724–26, 2753–54; Brav et al., *Innovation, supra* note 14, at 238–39.

[299] *See* Coffee & Palia, *supra* note 10, at 550.

[300] *See* Malmendier & Tate, *Investment*, *supra* note 34, at 2696 ("Specifically, standard incentives such as stock- and option-based compensation are unlikely to mitigate the detrimental effects of managerial overconfidence.").

[301] *See* Humphery-Jenner et al., *supra* note 154, at 538–42.

other long-term investments. Possibly consistent with this behavior, shareholder payouts of S&P 500 companies recently reached 90% of their income.[302] Accordingly, investment in R&D has declined relative to shareholder disbursements.[303] Hedge fund pressure, in turn, is motivated by the funds' need for liquidity and the pressure that they face from their investors.

If, however, long-termist managers are predisposed to overinvest in long-term assets like R&D, forcing shareholder distributions could curb at least some of these overinvestments. To be sure, disbursing inside capital can sometimes limit desirable investments. Yet, there is reason to believe that the pressure to increase payouts will tend disproportionally to limit those investments that are driven by overconfidence. As discussed above, overconfidence thrives on the availability of internal cash flow (or "house money") of the firm.[304] If deployment of such resources is poorly monitored, overconfident managers are more likely to use it for investments.[305] When such resources are more tightly constrained, in contrast, managers will be forced to raise capital externally and are less likely to invest, presumably since they believe that their company is undervalued, and external finance is thus too costly.[306] Consequently, placing pressure on the distribution of internal funds disproportionally reduces overconfident investments.

Relatedly, there is empirical evidence to suggest that the pressure to increase payouts will limit the most problematic *types* of long-term investments. For example, value destroying acquisitions by overconfident managers are more likely and

[302] *See* William Lazonick, *Profits Without Prosperity*, 92 HARV. BUS. REV., Sept. 2014, at 46, 48.

[303] Dion Rabouin, *More Spent on S&P 500 Buybacks Than All 2018 R&D*, AXIOS (June 19, 2019), https://www.axios.com/sp-500-buybacks-chart-ef39e17b-a757-4e21-a1a4-9c248b977791.html [https://perma.cc/VQG9-L98J].

[304] *See supra* notes 127–30 and accompanying text.

[305] *See* Malmendier & Tate, *Investment*, *supra* note 34, at 2662–64.

[306] *Id.*

more harmful when they are financed from internal funds.[307] Similarly, the inclination to overinvest is weaker when managers cannot rely on internal finance and must "sell" their plans to outside financiers.[308] This payout pressure thus affects overconfident CEOs more than it does others. Indeed, it is hardly a coincidence that in the three case studies explored above—Yahoo, AOL, and Navistar—the companies were generating significant internal cash flows, which were in turn used to underwrite the long-term strategies.[309] The activist hedge funds that intervened, accordingly, demanded that the managers distribute some of these cash flows to shareholders rather than reinvest it. Thus, one way to understand the pressure to increase payouts is that doing so forces managers to invest (at least in part) external funds rather than internal funds, and are thereby forced to pitch for and raise capital in the market for their investments. Thus, they should only pursue these investments if they pass the market test. Consistent with this interpretation, Fried and Wang recently found that while firms paid out more than 90% of their cash flow to shareholders, they also issued new equity in significant value.[310] In particular, after new issuances are taken into account, the net payouts to shareholders were around 41% of net income, less than half of the total payouts.[311]

3. Firm Governance

Our arguments may also have implications for firm governance. Long-termism, since it is driven by overconfident

[307] *See* Malmendier & Tate, *Acquisitions*, *supra* note 35 (finding that overconfident CEO are likely to make value destroying acquisitions, and the effect is stronger if they have access to internal financing).

[308] *See* Malmendier & Tate, *Investment*, *supra* note 34, at 2661–63 (finding that overconfident CEOs "overinvest when they have abundant internal funds, but curtail investment when they require external financing" and that this "sensitivity of investment to cash flow is strongest for CEOs of equity-dependent firms, for whom perceived financing constraints are most binding").

[309] *See, e.g.*, Jackson, *supra* note 216; Carlson, *supra* note 32; Clothier & Barinka, *supra* note 277.

[310] *See* Fried & Wang, *supra* note 36, at 208–10.

[311] *Id.*

management, underscores the need for effective and engaged directors.[312] Board members have the institutional standing to provide immediate feedback that could (at least potentially) constrain overconfidence and long-termism. Indeed, this type of feedback has been shown to be effective—empirical studies on the passage of the Sarbanes Oxley Act of 2002 and the ensuing requirement to implement a majority of independent directors found that effects have been particularly salient in firms with overconfident managers.[313] In firms whose managers were classified as overconfident, investment declined significantly and firm performance has increased.[314] We can infer, then, that independent directors limited investment in projects that were likely to be overestimated by management.[315]

Activists increasingly nominate members to firms' boards, more and more by way of settlements with firms' management. Such board members, this Article suggests, could play an important role in limiting overconfident, undesirable investments. Some evidence is indeed supportive of activists' directors adding value to firms.[316] To begin with, when activists gain board representation they hold stock in the target for a median of three years.[317] Second, one study finds long-term improvement in operating performance–during the five years following activism, returns on assets increased by more than 2% on average for these firms.[318] The authors then conclude that:

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[312] Malmendier & Tate, *Investment*, *supra* note 34, at 2695–96 (finding that "the results confirm the need for independent and vigilant directors").

[313] *See* Banerjee et al., *supra* note 129, at 2815.

[314] *See id.*

[315] *See* Coffee & Palia, *supra* note 10, at 574–76 (surveying studies that find that hedge fund activism is associated with a decline in R&D investment).

[316] *See generally* Ian D. Gow et al., *Activist Directors: Determinants and Consequences* (Harv Bus. Sch., Working Paper No. 14-120, 2014), https://www.hbs.edu/faculty/Publication%20Files/14-120_451759fe-d298-4072-81d1-b007fd4d5bc0.pdf [https://perma.cc/68TW-HM3A].

[317] *Id.* at 15–16.

[318] *Id.* at 3.

> [T]he relatively long-term holding period in cases where activists become directors, positive stock market effect, and long-term operating performance improvements seem inconsistent with activist directors being short-termist.[319]

C. Legal Policy Implications

Our arguments also bear on several legal and regulatory reforms that are at various stages of progression. Most of them are motivated by the view that unalloyed short-termism impairs the proper functioning of capital markets. When one views short-termism alongside long-termism, however, the likely effects of these reforms become somewhat harder to evaluate.

1. Activist Restrictions, Quarterly Reporting, and Dual Class IPOs

As noted in Part II, significant concerns with respect to short-termism have led policymakers, judges, academics, and practitioners—including many who usually object to any form of regulation in corporate law—to advocate regulatory changes to curb short-term investing and encourage long-term management.[320] Several statutory or regulatory reforms currently loom large. Most immediately, Congress will soon consider the proposed Brokaw Act, which would require greater disclosures and limit traditionally profitable strategies of hedge fund activists.[321] The concern of short-term bias, as expressed by co-sponsoring Senator Tammy Baldwin is the direct and almost sole motivation for the Act: "We cannot allow our economy to be hijacked by a small group of investors who

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[319] *Id.* at 4.

[320] *See supra* notes 80–106 and accompanying text.

[321] *See* Brokaw Act, S. 1744, 115th Cong. (2017). An earlier version of the bill was submitted in 2016 but was not voted on. *See* Brokaw Act, S. 2720, 114th Cong. (2016).

seek only to enrich themselves at the expense of workers, taxpayers and communities . . . ."[322]

If passed, the proposed Act—named after a Wisconsin town whose century-old paper mill was shuddered by an activist hedge fund—would direct the SEC to amend Section 13(d) reporting rules in several respects.[323] Most notably, the amendment would shorten hedge funds' reporting window to investors, after they cross the 5% ownership threshold, to four days.[324] Under current law, any investor who buys more than 5% of a firm's shares is obliged to file a 13D disclosure form that reports the investor's identity, ownership, whether the investor has an intention to take over the company, and other relevant details.[325] At present, investors crossing the threshold have a ten day window to file a 13D from the day they become a beneficial owner (that is, when they own more than 5%).[326] When a 13D is filed, the market learns (often for the first time) that the firm was targeted by a hedge fund activist, which typically triggers a significant positive market response. Thus, hedge fund managers typically accumulate more shares within the ten day window before the price increase takes hold. Shortening the window to four days will limit the amount of shares that hedge funds can buy at the pre-announcement market price, and in turn their overall profits from activism. Second, the amendment will broaden the disclosure obligation's applicability to cover short positions and derivatives.[327] Third, the Act will broaden the definition of "group" for 13D purposes, explicitly including "wolf packs" of coordinated hedge funds purchasing parallel initial blocks.[328] To the extent that short- and long-termism counterbalance one another, however, the reforms proposed by the

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[322] *See* Donna Borak & David Benoit, *Democrats Take Aim at Activist Investors*, WALL ST. J. (Mar. 17, 2016), https://www.wsj.com/articles/democrats-take-aim-at-activist-investors-1458251491 [https://perma.cc/WXB3-BEZY].

[323] *See* S. 1744.

[324] *Id.* § 2(a)(1).

[325] 15 U.S.C. § 78m(d)(1) (2018); 17 C.F.R. § 240.13d-1(a) (2019).

[326] 15 U.S.C. § 78m(d).

[327] S. 1744 §§ 2(b)(2), 2(c).

[328] *Id.* § 2(b)(2).

Brokaw Act may well disrupt that balance in a way that disserves shareholder interest.[329]

Similarly, the concern of short-term bias and its effects on long-term growth has led to proposals to eliminate the requirement that firms make their performance public every quarter.[330] And, after a presidential tweet, the SEC issued a notice for public comment on the proposal.[331] Advocates of these policies tend to cite short-termism as well as compliance costs that typically are associated with quarterly reporting.[332] Our analysis suggests, however, that curbing quarterly feedback could also result in more costly forms of long-termism. A better direction for federal regulation might be to account for how short-termism and long-termism interact with (and sometimes counteract) one another, with the goal of minimizing the costs of both long-termism and short-termism.

Our analysis also helps shed light on another growing trend—the resurgence of companies going public with a "dual class" stock structure—under which some shares (typically the ones belonging to the founders) have significantly more votes per share than the company's common stock (purchased

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[329] We observe that much of the public rhetoric surrounding the Brokaw Act appears to focus on *non-shareholder* interests—in particular that of the laid-off workers the Act's eponymous Wisconsin town. As discussed elsewhere in this Article, a stakeholder-oriented perspective *might* rationalize certain types of long-term deference, but only if doing so compares favorably to a host of other, more direct means to redress stakeholder interests more directly. *See supra* notes 51–54*, infra* notes 273–75, and accompanying texts.

[330] *See, e.g.*, Lipton, *New Paradigm*, *supra* note 13.

[331] *See* Request for Comment on Earnings Releases and Quarterly Reports, Securities Exchange Act Release No. 34-84842, 83 Fed. Reg. 65,601 (Dec. 18, 2018) (to be codified at 17 C.F.R. pts 210, 230, 239, 240, 243 & 249).

[332] *See, e.g.,* Suresh Nallareddy et al., *Consequences of Mandatory Quarterly Reporting: The U.K. Experience* 17 (Columbia Bus. Sch., Research Paper No. 17-33, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2817120 [https://perma.cc/58J4-VDH8]; Matthew Abenante, *The Pros and Cons of Switching From Quarterly to Semiannual Reporting*, FORBES (Oct. 12, 2018), https://www.forbes.com/sites/forbesagencycouncil/2018/10/12/the-pros-and-cons-of-switching-from-quarterly-to-semiannual-reporting/#2b6b559a227f [https://perma.cc/TJ49-KC54].

by outside investors).[333] The structure usually results in a governance regime with significant separation of ownership and control. That is, founders retain sufficient votes to control the firms even though they own only a small fraction of the economic ownership stakes, and they bear only a part of the consequences of their decisions. Dual class structures have proven highly controversial as of late, and some securities regulators around the world prohibit it (but not the United States, yet).[334] Scholars have come down on both sides of the dual class debate, with some excoriating the practice,[335] and others offering explanations as to why dual class stock may increase value (usually by deterring short-term focused investors from intervening in the founder's long-term vision and possibly allowing them to pre-commit not to do so).[336] Our analysis suggests, however, that while founders may sometimes be right in their assessment of their long term vision's value, when the embrace of dual class structure is the product of managerial optimism with respect to long-term investments the decision may be wasteful. That said, we are reluctant to advocate for a blanket prohibition on dual class stock (as others have championed[337]). It is difficult indeed for outsiders to unpack the motivations of a founder who embraces a dual class structure; it may be due to overconfidence (and thus value-eroding), but it could just as easily be due to a founder's genuine desire to protect a project that is inherently difficult for outsiders to assess. Moreover, the founder might simply place idiosyncratic value on maintaining control, and is

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[333] *See, e.g.*, Jay R. Ritter, Initial Public Offerings: Dual Class IPOs (Dec. 31, 2018) (unpublished manuscript), https://site.warrington.ufl.edu/ritter/files/2019/04/IPOs2018DualClass.pdf [https://perma.cc/4S3X-H3G4].

[334] This could certainly change: at least one sitting SEC Commissioner has openly entertained the prospect of prohibiting perpetual dual class capital structures. *See* Robert J. Jackson Jr., Commissioner, Sec. & Exch. Comm'n, Perpetual Dual-Class Stock: The Case Against Corporate Royalty (Feb. 15, 2018).

[335] *See, e.g.*, Lucian A. Bebchuk & Kobi Kastiel, *The Untenable Case for Perpetual Dual-Class Stock*, 103 VA. L. REV. 585, 601–09 (2017).

[336] *See* Goshen & Hamdani, *supra* note 45, at 576–83, 610–11.

[337] *See generally* Bebchuk & Kastiel, *supra* note 335.

willing to incur the costs of doing so in the form of the price discount that outside investors will no doubt impose on the sale (particularly if they are short-term oriented). Whatever their motivation, dual-class founders will internalize the loss.

2. Directors' Fiduciary Duties

As developed in Part II, Delaware courts have recently begun to float concerns about short-termism and its implications for fiduciary conduct.[338] Accordingly, several opinions have begun to modify the framework for assessing directors' fiduciary duties, requiring that directors "manage for the long-term" on behalf of "permanent capital" (often favoring common shareholders over preferred shareholders holding redemption or exit rights).[339] Under Delaware law, directors typically receive the deference of the business judgement rule (the "BJR"): if they were sufficiently informed and not conflicted the court will not judge the wisdom of their business decisions with a hindsight.[340] While directors' fiduciary duties were always understood to require them to act to maximize overall value, the way they went about doing so (including the relevant time horizons they employed) was presumed to be largely within their discretion.[341] Yet, under the Chancery Court's emerging

[338] *See supra* notes 87–106 and accompanying text.

[339] *See* Frederick Hsu Living Tr. v. ODN Holding Corp., No. 12108-VCL, 2017 WL 1437308, at *18 (Del. Ch. Apr. 24, 2017) ("[T]he fiduciary relationship requires that the directors act prudently, loyally, and in good faith to maximize the value of the corporation over the long-term for the benefit of the providers of presumptively permanent equity capital, as warranted for an entity with a presumptively perpetual life in which the residual claimants have locked in their investment." (footnote omitted)); *In re* Rural/Metro Corp. Stockholders Litig., 102 A.3d 205, 253 (Del. Ch. 2014). *See also* Laster & Zeberkiewicz, *supra* note 13, at 50 ("[T]he blockholder director's duties to the corporation require that the director manage for the long term, while the blockholder director's duties to the investor require that the director manage for an exit.").

[340] *See, e.g.*, Aronson v. Lewis, 473 A.2d 805, 812 (Del. 1984); Zapata Corp. v. Maldonado, 430 A.2d 779, 782 (Del. 1981).

[341] While Laster draws his decision from what he views as a long-standing duty to maximize long term value, many view the decision as precedential under Delaware law. *See, e.g.*, Jack Bodne et al., *VC Laster,*

jurisprudence, a director who acts to maximize short term value may be deemed conflicted on that basis alone.[342]

A long-termist account of fiduciary duties not only strips directors from the protections of the BJR, but it also results in the highest standard of review applied by Delaware courts—the entire fairness standard. Under this standard, which is typically reserved for direct conflicts of interest such as naked self-dealing, the director has the burden to prove the fairness of the transaction process and the fairness of the price.[343] The standard is difficult to meet, and a long-termist litmus test may well result in a real risk that the director will be found to breach her duty of loyalty to shareholders. Furthermore, while Delaware law provides additional layers of protection for directors from monetary liability for a breach of the duty of care, it does not (usually) award these protections if the director was found to breach her of duty of loyalty.[344] The emerging Delaware approach, then, could expose directors that were nominated by activist hedge funds to a nontrivial risk of liability. Although the cases applying this new approach to fiduciary duties have thus far largely side-stepped imposing real consequences for breach, it is likely a matter of time before the full measure of liability exposure begins to emerge. Based on the arguments above, we would advise Delaware courts to continue to utilize caution in applying long-termist fiduciary duties—or at least to work through how long-term and short-term biases interact with one another.

Fiduciary Duties and The Long-Term Rule, LAW 360 (Mar. 11, 2015), https://www.cov.com/-/media/files/corporate/publications/2015/03/vc_laster_fiduciary_duties_and_the_long_term_rule.pdf [https://perma.cc/9ZVH-UM29] ("The notion that directors are required to maximize value over the long term and that directors who represent stockholders with short-term investment horizons necessarily face a conflict of interest . . . represent[s] a significant change in the law . . . .").

[342] *See In re* PLX Tech. Inc. Stockholders Litig. No. 9880-VCL, 2018 WL 5018535 (Del. Ch. Oct. 16, 2018); *In re* Trados Inc. S'holder Litig., 73 A.3d 17, 37 (Del. Ch. 2013).

[343] *See, e.g.*, Weinberger v. UOP, Inc., 457 A.2d 701, 710 (Del. 1983).

[344] *See* John C. Kairis, *Disgorgement of Compensation Paid to Directors During the Time They Were Grossly Negligent: An Available but Seldom Used Remedy*, 13 DEL. L. REV. 1, 4–5 (2011).

3. Executive Compensation

In addition to animating reform proposals in securities regulation and the fiduciary duty framework, short-termism concerns have also been caught up in executive compensation practices, which some advocates maintain should be changed to better align managers' wealth to the long-term performance of the firm.[345] One commentator has argued that: "The most effective way to curb short-termism would be to lengthen the time horizons in the compensation packages of asset managers and corporate executives."[346]

Long-term compensation packages, the argument goes, would better align managers incentives with those of the long-term shareholders. Furthermore, long-term compensation packages also supposedly prevent executives from overinvesting.[347] Yet, when such proposals are viewed through the lens of our argument, the creation of long-term incentives could actually exacerbate the bias of overconfident managers smitten with their own long-term investments.[348] Indeed, overconfident CEOs show higher demand for incentive-based compensation than CEOs that are more dispassionately disposed.[349] And yet, these same managers hold onto their options all the

[345] *See, e.g.*, Johnathan Pogach, *Short-termism of Executive Compensation*, 148 J. ECON. BEHAV. & ORG. 150 (2018).

[346] Robert C. Pozen, *Curbing Short-Termism in Corporate America: Focus on Executive Compensation*, GOVERNANCE STUD. BROOKINGS 2 (2014), https://corpgov.law.harvard.edu/wp-content/uploads/2014/05/Brookings_ShortTermism-final.pdf [https://perma.cc/U227-4QKF]. *See also* Martin Lipton & Sebastian V. Niles, *The Spotlight on Boards 2017*, HARV. L. SCH. F. CORP. GOVERNANCE & FIN. REG. (Jan. 29, 2017), https://corpgov.law.harvard.edu/2017/01/29/the-spotlight-on-boards-2017-2/ [https://perma.cc/4BVH-8AQW] (stating that boards are expected to "[d]etermine executive compensation to encourage and reward executives for accomplishing business goals in furtherance of the company's long-term strategy").

[347] *See* Coffee & Palia, *supra* note 10, at 593–94.

[348] *See*, *e.g.*, Malmendier & Tate, *Investment*, *supra* note 34, at 2696 ("Specifically, standard incentives such as stock- and option-based compensation are unlikely to mitigate the detrimental effects of managerial overconfidence.").

[349] *See* Humphery-Jenner et al., *supra* note 154, at 538–42.

way until expiry, typically losing money from not exercising them earlier—that is, their predictions turned out to be overly sanguine on average.[350] Thus, to the extent that managers already suffer from long-term bias, compensation contracts that double down on such biases are unlikely to improve things.

4. Takeover Defenses and Just Saying No

Finally, our analysis has implications for Delaware's approach to takeover cases in the particular circumstance where the company erects defenses to a hostile suitor. If managers have a long-term plan for the company that a hostile bidder might interrupt, Delaware courts have consistently allowed them—under the so-called "*Unocal*" rule—to resist the suitor (essentially forever), regardless of the price the bidder is offering to shareholders.[351] Delaware courts long ago decided that managers need not convince the court that their long-term plan will result in higher better value for shareholders than the bidder's offer. Rather, so long as target company directors are sufficiently informed and genuinely believe that their long-term plan will eventually result in higher gains for shareholders, they are allowed to "just say no" to the hostile acquirer.[352] If managers choose to just say no, the inevitable result is that they block the bidder. Thus, shareholders are never guaranteed the option of deciding whether to sell their shares at a premium to the bidder, even if they have lost faith in management's long-term plan. To the contrary, the target board retains significant power to resist, predicated on the idea that shareholders may mistakenly agree to sell their shares out of ignorance as to the incumbent management's long-term plan.[353]

[350] *See, e.g.*, Malmendier & Tate, *Investment*, *supra* note 34, at 2672.

[351] *See* Unocal Corp. v. Mesa Petroleum Co., 493 A.2d 946 (Del. 1985); *see also* Air Prods. & Chems., Inc. v. Airgas, Inc., 16 A.3d 48, 108–09 (Del.Ch. 2011) (holding that a board complied with fiduciary duties by maintaining a just-say-no defense over a period of years in the face of a hostile suitor).

[352] *See, e.g.*, Paramount Commc'ns, Inc. v. Time Inc., 571 A.2d 1140, 1153 (Del. 1989).

[353] *Id.*

It is exceedingly unlikely that this area of law (which has been largely baked since the late 1980s)[354] will ever change dramatically. That said, our analysis suggests that some managers are prone to systematically overestimating the value of their long-term investments. Consequently, there is a concomitant concern that managers will mistakenly block a high premium offer to shareholders, hoping to protect the sanctity of a long-term plan that managers honestly (though incorrectly) subscribe to. Were the *Unocal* rule rewritten on a blank slate, our analysis suggests the distinct cost of placing too much discretion in the hands of overconfident managers should be accounted for; at the very least, the potential danger of long-termism should factor into the analysis.[355]

V. CONCLUSION

A significant and fast-growing literature has increasingly focused on the purported dangers of short-term bias within public capital markets. Although the substantive severity of the short-termism threat is still a topic of much debate, the argument has galvanized sufficient energy to catalyze both doctrinal change and numerous institutional reform proposals. Motivated by some curious paradoxes within this debate, this Article has advanced—we believe for the first time—an argument that, along with short-term pressures, managers also suffer from long-term biases. Drawing on the extensive academic literature on overconfidence as well as three real-world case studies, this Article has shown that long-term projects are systematically susceptible to overestimation by managers. The high potential upside such projects offer is

[354] *See e.g.*, Jennifer Arlen & Eric Talley, *Unregulable Defenses and the Perils of Shareholder Choice*, 152 U. PA. L. REV. 577, 578, 606 (2003) (noting the continued longevity of the "just say no" defense).

[355] In some respects, the dangers of long-termism could still sneak in the back door of the *Unocal* doctrine, through its requirement that a defensive measure must be proportional to the threat posed, and cannot be preclusive or coercive as to an outside hostile bidder. *See* Unitrin, Inc. v. Am. Gen. Corp., 651 A.2d 1361, 1386–88 (Del. 1995). Long-termist business plans are especially likely to dismiss all outside bids categorically, and thus could conceivably run afoul of *Unocal's* proportionality requirement.

especially tempting to optimistic managers. And, their long gestation periods and inherent vagueness further exacerbate the drivers of overconfidence: the illusion of control, skill overestimation, competition neglect, and stubborn commitment. Moreover, the factors that usually constrain overconfidence—clear and immediate feedback, benchmarking data, and learning—are frequently lacking. Our arguments are directly relevant to the ongoing debate over short-termism because they raise the intriguing possibility of an equilibrium "symbiosis" between short-termism and long-termism, with each negating at least some of the worst parts of the other, ultimately resulting in more balanced (if at times contentious) corporate decision-making. Viewed in this sense, long-termism may be the yin to short-termism's yang.

The framework developed above, moreover, has implications for both business and legal/regulatory policy. At the very least, it suggests that we ought to proceed with some measured caution in promulgating institutional elixirs to contend with the perceived ills of short-termism. Thus far, such reform efforts are still in their embryonic stages—and as they develop further, we should remain mindful of maintaining a balance between addressing short- and long-term biases.

Although our framework leaves us skeptical about the desirability of unalloyed long-termist frames for maximizing shareholder value alone, it may still prove to be the case that long-term oriented approaches can reliably implement a more fully-realized vision of stakeholder governance, where the concerns of employees, customers, creditors, and surrounding communities also receive nontrivial weight in the firm's strategy. Interestingly, several traditional defenders of uninhibited managerialism appear recently to have become "woke" to stakeholder theories of governance.[356] Regardless of whether

[356] *See, e.g.*, *Business Roundtable Redefines the Purpose of a Corporation to Promote 'An Economy That Serves All Americans'*, BUS. ROUNDTABLE (Aug. 19, 2019), https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans [https://perma.cc/84C5-N2WS]; Martin Lipton, *It's Time to Adopt the New Paradigm*, HARV. L. SCH. F. CORP. GOVERNANCE & FIN. REG. (Feb. 19, 2019), https://corpgov.law.harvard.edu/2019/02/11/its-time-to-adopt-the-new-paradigm/ [https://perma.cc/LUM3-47XP].

this epiphany is genuine or instrumental (e.g., to preempt less management-friendly proposals[357]), in our view whether long-termist accounts of corporate purpose are an effective way to harmonize stakeholder welfare concerns with mainstream corporate law (which have traditionally been uneasy bedfellows) merits exploring. If that is the goal, however, the promise of long-termism as a form of stakeholder governance should be compared—on an apples-to-apples basis—with plausible alternatives designed to bring about stakeholder governance more directly. Such alternatives include alternative "double-bottom-line" corporate structures (such as the public benefit corporation), alternative financing arrangements (such as green bonds), tax incentives, and regulatory policy.[358] This larger debate is almost certainly one worth having, and one that raises issues—and hopefully attracts solutions—that will make us all better off in the long (if not the short) term.

[357] *See supra* notes 60–64 and accompanying texts.

[358] *Id.*