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Carrots and Sticks in Private Climate Governance

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ARTICLE

CARROTS AND STICKS IN PRIVATE CLIMATE GOVERNANCE

by: Jonathan M. Gilligan*

ABSTRACT

When public governance fails to address important environmental threats—such as climate change—private governance by firms, not-for-profits, individuals, and households can produce significant reductions in greenhouse gas emissions. Private governance can take the form of either a carrot or a stick, using incentives or punishments. Shareholder activism as a form of private governance of corporations has largely been confrontational, leading most climate-related actions to fail. This Article examines the potential for private governance to take a more collaborative approach and to frame shareholder engagement with management in terms of opportunity. It also examines private governance successes at reducing household emissions and finds that these too emphasize making it attractive and convenient for households to act.

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I. INTRODUCTION

In 2017, as the United States repudiated its previous commitments to fighting climate change, both internationally and domestically, more than 1,700 businesses and investors stepped forward to declare that they remained committed to cutting greenhouse gas emissions.¹ They joined hundreds of not-for-profit organizations, such as colleges, universities, and faith-based organizations, as well as city, county, and

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1. Jennifer A. Dlouhy, *As Trump Steps Back from Climate Talks, Coke and HP Move In*, BLOOMBERG (Nov. 7, 2017, 11:00 PM), <https://www.bloomberg.com/news/articles/2017-11-08/as-trump-steps-back-from-un-climate-talks-coke-and-hp-move-in> [<https://perma.cc/65FJ-N3DP>].

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state governments, to form the “We Are Still In” coalition.² This announcement focused attention on the growing power of private organizations, both for-profit and not-for-profit, to use their market power to perform activities traditionally associated with public governance and regulation. The not-for-profit organization CDP (formerly the Carbon Disclosure Project) reports that pressure from large purchasing firms led their suppliers to reduce annual carbon dioxide emissions by more than 550 million metric tons.³

Attention to environmental, social, and governance (“ESG”) issues by institutional investors has expanded from a niche of socially responsible investment funds and now encompasses a broad variety of funds, including public and private pension funds, insurance companies, and large investment funds.⁴ These funds are primarily concerned about the impact of ESG issues—such as climate change—on financial performance, whereas earlier socially responsible investors were mostly concerned about ethical issues.⁵ A growing number of pension-fund managers and trustees in the United States and abroad conclude that their fiduciary responsibilities include acting to offset threats to the long-term performance of their funds due to climate change.⁶ Insurers and bond-rating firms are applying pressure on private firms and governments alike to address their exposure to climate-related risks.⁷ Moody’s Investor Service recently announced that it

2. *Id.*; see also *America is Still In. Are You?*, WE ARE STILL IN, <https://www.werestillin.com/> (last visited Feb. 25, 2018) [<https://perma.cc/PKP8-ULFB>].

3. CDP, CLOSING THE GAP: SCALING UP SUSTAINABLE SUPPLY CHAINS 4, 6 (2018), available at https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcedd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/003/014/original/CDP_Supply_Chain_Report_2018.pdf?1518084325 [<https://perma.cc/Q35D-XWSM>].

4. Stuart L. Gillan & Laura T. Starks, *The Evolution of Shareholder Activism in the United States*, 19 J. APPLIED CORP. FIN. 55, 63–64 (2007); W. Trexler Proffitt, Jr. & Andrew Spicer, *Shaping the Shareholder Activism Agenda: Institutional Investors and Global Social Issues*, 4 STRATEGIC ORG. 165 (2016); Emma Sjöström, *Shareholder Activism for Corporate Social Responsibility: What Do We Know?*, 16 SUSTAINABLE DEV. 141 (2008).

5. Gary J. Cundill et al., *Non-financial Shareholder Activism: A Process Model for Influencing Corporate Environmental and Social Performance*, 20 INT’L J. MGMT. REVS. 606 (2018); Jody Grewal et al., *Shareholder Activism on Sustainability Issues* (Harvard Bus. Sch., Working Paper 17-003, 2016).

6. David Hess, *Public Pensions and the Promise of Shareholder Activism for the Next Frontier of Corporate Governance: Sustainable Economic Development*, 2 VA. L. & BUS. REV. 221, 223–25 (2007); MATTHEW BINSTED ET AL., CLIMATE CHANGE RISK AND THE MARYLAND STATE RETIREMENT AND PENSION SYSTEM, CTR. FOR GLOB. SUSTAINABILITY 10–11 (2017), available at <https://static1.squarespace.com/static/57f412f329687f78aa26ded4/t/59d66bd3be42d6d41ba6865d/1507224543565/Climate+Change+Risk+and+the+MD+SRPS.pdf> [<https://perma.cc/NG5Q-EUML>]; see RHODE ISLAND TREASURY ENGAGEMENT OVERVIEW 2017 SHAREHOLDER SEASON, OFFICE OF THE GEN. TREASURER (2017), available at http://d10k7k7mywg42z.cloudfront.net/assets/59959275407808649f02494a/Shareholder_Engagement_Overview_RI_Treasury_2017.pdf [<https://perma.cc/95G4-SFGB>].

7. Karl Mathiesen, *Rating Climate Risks to Credit Worthiness*, 8 NATURE CLIMATE CHANGE 454–56 (2018).

would downgrade its ratings of cities and states that it judged under-prepared for climate risks.⁸ Lloyd's of London recently joined fifteen other large insurance companies in divesting from coal companies,⁹ and several other insurance companies have announced that they will deny coverage to coal mines and coal-burning power plants.¹⁰ Just before the June 2018 meeting of the G7, a consortium of 288 institutional investors with \$26 trillion in assets called on the G7 governments to rapidly phase out the use of coal, eliminate fossil fuel subsidies, and impose a significant price on greenhouse gas emissions.¹¹

Political activists have received considerable attention for their actions to pressure institutional investors, such as college and university endowments, to divest from fossil-fuel companies.¹² Activist investors have also received attention for pressuring companies to disclose the risks they face related to climate change.¹³

These kinds of actions are confrontational and punitive. Their principal effect, if successful, would be to hurt the target company's share price and to publicly shame the company for its contributions to global climate change. Punishment and shaming can be useful tools for effecting change, but they do not always work. Even when they do work, they may not be the most effective measures. Positive and constructive engagements—carrots, rather than sticks—have not received as much attention as negative ones, but I argue in this Article that they have considerable potential, especially in a society as politically

8. Jeff Nesbit, *When Climate Change Becomes a Credit Problem*, N.Y. TIMES (Dec. 13, 2017), <https://www.nytimes.com/2017/12/13/opinion/climate-change-credit.html> [<https://perma.cc/N498-75PH>]; Press Release, Moody's Investor Service, Climate Change is Forecast to Heighten US Exposure to Economic Loss Placing Short- and Long-Term Credit Pressure on US States and Local Governments (Nov. 28, 2017), https://www.moody.com/research/Moodys-Climate-change-is-forecast-to-heighten-US-exposure-to—PR_376056 [<https://perma.cc/84UC-WL2K>].

9. Julia Kollwe, *Lloyd's of London to Divest from Coal over Climate Change*, GUARDIAN (Jan. 21, 2018), <http://www.theguardian.com/business/2018/jan/21/lloyds-of-london-to-divest-from-coal-over-climate-change> [<https://perma.cc/9ZFC-GB6S>].

10. Oliver Ralph, *Insurers Go Cold on Coal Industry*, FIN. TIMES (Jan. 7, 2018), <https://www.ft.com/content/7ec63f34-f20c-11e7-ac08-07c3086a2625> [<https://perma.cc/757Z-6S63>].

11. Alister Doyle, *Big Investors Urge G7 to Step Up Climate Action, Shift from Coal*, REUTERS (June 3, 2018, 6:21 PM), <https://www.reuters.com/article/us-climate-change-investors/big-investors-urge-g7-to-step-up-climate-action-shift-from-coal-idUSKCN1IZ0ZP> [<https://perma.cc/Y2A2-BGRC>].

12. Julie Ayling & Neil Gunningham, *Non-State Governance and Climate Policy: The Fossil Fuel Divestment Movement*, 17 CLIMATE POL'Y 131, 135 (2015); Randall Smith, *A New Divestment Focus on Campus: Fossil Fuels*, N.Y. TIMES (Sept. 5, 2013, 3:53 PM), <https://dealbook.nytimes.com/2013/09/05/a-new-divestment-focus-fossil-fuels/> [<https://perma.cc/AVF5-PBFG>].

13. Attracta Mooney & Ed Crooks, *Top Investment Groups Push for Action on Climate Risks*, FIN. TIMES (Oct. 1, 2017), <https://www.ft.com/content/48ad5476-a6aa-11e7-ab55-27219df83c97> [<https://perma.cc/7GQ9-QWCR>]; BINSTED ET AL., *supra* note 6, at 17; Grewal et al., *supra* note 5, at 16.

polarized over climate change as the United States. In *Exit, Voice, and Loyalty*, Albert Hirschman argued that stakeholders dissatisfied with an organization's performance may seek better outcomes either through *exit* (e.g., customers may patronize a competitor, voters may switch parties, and investors may divest from a poorly performing firm) or *voice* (stakeholders may complain or make suggestions).¹⁴ Hirschman argued that relying only on one mode diminished the effectiveness of engagement, both for the organization and for the stakeholders.

II. PRIVATE GOVERNANCE BY INVESTORS AND FIRMS

Private governance occurs when private entities—businesses, not-for-profit organizations, individuals, etc.—pursue a goal traditionally associated with public governance, such as reducing greenhouse gas emissions, through actions that produce broad influence over others.¹⁵ This influence is what distinguishes private governance from actions whose sole or principal effect is to reduce the actor's own emissions with little impact on others' actions. Examples of businesses and other private organizations acting as regulators include firms using supply-chain contracting to coerce their suppliers to reduce their greenhouse gas emissions and investors pressuring firms to disclose their carbon emissions or adopt sustainable business practices.

Private environmental governance is unlikely to make a satisfactory substitute for public regulations, but it has the potential to make meaningful contributions to reducing greenhouse gas emissions.¹⁶ It is important, even necessary, for addressing climate change because the United States federal government has largely abdicated its commitments to address the threat of climate change.¹⁷

Vandenbergh and Gilligan have proposed a framework for analyzing private governance in terms of technical potential, behavioral plasticity, and policy plasticity. Technical potential refers to the total emissions reduction that a class of actions could achieve with perfect compliance. Behavioral plasticity refers to the degree of compliance that could be expected under a well-executed private governance policy, taking into account that private actors have far less power to compel action than public governments do. Policy plasticity refers to the

14. ALBERT O. HIRSCHMAN, *EXIT, VOICE, AND LOYALTY: RESPONSES TO DECLINE IN FIRMS, ORGANIZATIONS, AND STATES* 3–5 (1970); see also Jennifer Goodman et al., *Social Shareholder Engagement: The Dynamics of Voice and Exit*, 125 J. BUS. ETHICS 193 (2014) (discussing the applicability and limitations of Hirschman's analysis to shareholder engagement with firms in disputes over social and environmental issues).

15. MICHAEL P. VANDENBERGH & JONATHAN M. GILLIGAN, *BEYOND POLITICS: THE PRIVATE GOVERNANCE RESPONSE TO CLIMATE CHANGE* 8–14 (2017).

16. *Id.* at 3.

17. *Id.* at 70–75.

ability of a private entity to enact and implement private-governance policies.

A. Technical Potential

Walmart partnered with the Environmental Defense Fund to reduce the greenhouse gas emissions from its supply chain by 28 million metric tons of CO₂ between 2010 and 2015 and pledged to reduce its supply-chain emissions from 2015–2030 by a total of one billion tons.¹⁸ CDP reports on ninety-nine large purchasing firms who engaged with their suppliers to assess and reduce greenhouse gas emissions.¹⁹ More than 4,800 suppliers responded and reduced their annual emissions by more than 550 million metric tons of CO₂ through efficiency measures that saved \$14 billion per year.²⁰ These results appear to be just a fraction of what supply-chain contracting can achieve because most sustainable supply-chain contracting only targets first-tier suppliers, which suggests that much greater emissions reductions could be obtained by extending these practices deeper into supply chains.²¹

Another area with large technical potential is bringing energy-efficient products to market. For example, residential lighting in the United States produces greenhouse gas emissions equivalent to roughly 210 million metric tons of CO₂ per year.²² Replacing in-

18. Press Release, Walmart, Walmart Launches Project Gigaton to Reduce Emissions in Company's Supply Chain (Apr. 19, 2017), <https://news.walmart.com/2017/04/19/walmart-launches-project-gigaton-to-reduce-emissions-in-companys-supply-chain> [<https://perma.cc/9ZQ5-RBAT>]; ENVTL. DEF. FUND, *The Power of Partnerships* 7 (Feb. 2016), http://business.edf.org/files/2016/02/EDF-Walmart-10-Year-Journey-Case-Study.FINAL_.pdf [<https://perma.cc/MUC5-YHDA>] (“Walmart not only met but surpassed the climate goal of reducing 20 [million metric tons] of [greenhouse gas emissions] from its global supply chain. And by the end of 2015, Walmart had achieved a 28 [million metric ton] reduction.”).

19. CDP, *supra* note 3, at 3.

20. *Id.* at 6.

21. *Id.*; Tannis Thorlakson et al., *Companies' Contribution to Sustainability Through Global Supply Chains*, 115 PNAS 2072, 2075 (2018), <http://www.pnas.org/content/pnas/115/9/2072.full.pdf> [<https://perma.cc/5FUA-TAX7>].

22. Table 4. *Residential Sector Key Indicators and Consumption*, U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2018 WITH PROJECTIONS TO 2050 (2018), <https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf> [<https://perma.cc/8JNX-KRZ9>] (reporting that U.S. households consumed 1.36 quads of electricity for lighting in 2016); EGRID SUMMARY TABLES 2016, U.S. ENVTL. PROT. AGENCY (Feb. 2018), https://www.epa.gov/sites/production/files/2018-02/documents/egrid2016_summarytables.pdf [<https://perma.cc/F634-XYN4>] (reporting that on average 1 megawatt hour of electricity produces greenhouse gas emissions equivalent to 1004.2 pounds of carbon dioxide); *Energy Units*, AM. PHYSICAL SOC'Y, <https://www.aps.org/policy/reports/popa-reports/energy/units.cfm> (last visited July 8, 2018) [<https://perma.cc/ASX7-HDJH>] (reporting that 1 kilowatt hour is equal to 3412 BTU, which implies that 1 quad (10¹⁵ BTU) is equal to 2.9×10⁸ megawatt hours). Combining these figures, we find that lighting consumes 4.0×10⁸ megawatt hours per year of electricity at the home, which corresponds to 4.2×10⁸ megawatt hours of electricity at the power plant, which is responsible for emitting greenhouse gases equivalent to roughly 210 million tons of carbon dioxide.

candescent bulbs with compact fluorescent (“CFL”) or LED bulbs reduces energy consumption, and thus greenhouse gas emissions, by 75–80%.²³ In 2007, Walmart announced an initiative to move CFL bulbs from a niche product into the mainstream by stocking inexpensive, reliable CFL bulbs (previously, the bulbs had to be purchased in specialty stores or through the mail) and set a goal of selling 100 million bulbs in a single year, which it achieved almost three months ahead of schedule.²⁴ Several years later, Walmart began working with its suppliers to produce an inexpensive, high-quality LED light bulb that would be more efficient and reliable than CFL bulbs.²⁵ A large part of the challenge was that in 2010, LED bulbs equivalent to a 60-Watt incandescent bulb sold for around \$40, and Walmart sought to break through the \$10 price point.²⁶ In 2013, General Electric released the first mass-market LED bulb below \$10, and Walmart followed shortly with a house-brand bulb for under \$9.²⁷ This precipitous drop in price coincided with a dramatic increase in sales, from around twelve million bulbs in 2012, to seventy-eight million bulbs in 2014, to more than 200 million bulbs in 2015. The rapid rise in LED lightbulb sales coincided with an unprecedented drop in per-capita residential electricity consumption in the United States, after sixty years of steady increases at an average rate of 4% per year.²⁸ An economic analysis of this decline in consumption suggests that the rise in energy-efficient lighting (both CFL and LED) is likely responsible.²⁹ In using its power as a major purchaser to pressure its suppliers to produce new

23. *How Energy-Efficient Light Bulbs Compare with Traditional Incandescents*, U.S. DEP’T OF ENERGY, <https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/how-energy-efficient-light> (last visited Feb. 26, 2018) [<https://perma.cc/Q5PZ-SZDS>].

24. Press Release, Walmart, Wal-Mart Surpasses Goal to Sell 100 Million Compact Fluorescent Light Bulbs Three Months Early (Oct. 2, 2017), https://corporate.walmart.com/_news/_news-archive/2007/10/02/wal-mart-surpasses-goal-to-sell-100-million-compact-fluorescent-light-bulbs-three-months-early [<https://perma.cc/BGW6-ZXNG>].

25. Peter Kelly-Detwiler, *How Walmart Brought Low-Cost LEDs to the Mass Market*, FORBES (Nov. 5, 2013), <http://www.forbes.com/sites/peterdetwiler/2013/11/05/how-walmart-brought-low-cost-leds-to-the-mass-market/> [<https://perma.cc/CJ3Y-9KKE>].

26. U.S. DEP’T OF ENERGY, *REVOLUTION . . . NOW: THE FUTURE ARRIVES FOR FIVE CLEAN ENERGY TECHNOLOGIES—2015 UPDATE 11* (2015), <https://www.energy.gov/sites/prod/files/2015/11/f27/Revolution-Now-11132015.pdf> [<https://perma.cc/P7V3-L2AU>].

27. *Id.*; Leah Rae, *GE and Walmart Team Up to Make Energy Efficiency More Accessible*, LED INSIDE (Oct. 3, 2013), http://www.ledinside.com/news/2013/10/ge_and_walmart_team_up_to_make_energy_efficiency_more_accessible [<https://perma.cc/J5RT-SRFP>]; Judy Lin, *Walmart Shows Aggressive Streak by Launching Under US\$ 9 LED Bulbs*, LED INSIDE (Oct. 4, 2013), http://www.ledinside.com/news/2013/10/walmart_shows_aggressive_streak_by_launching_under_us_9_led_bulbs [<https://perma.cc/R3MX-SFCL>].

28. Lucas W. Davis, *Evidence of Decline in Electricity Use by U.S. Households*, 37 ECON. BULL. 1098, 1098 (2017).

29. *Id.* at 2.

energy-efficient lighting products and using its stores and marketing to promote those products, Walmart acted analogously to public regulators who set energy-efficiency standards. However, it is noteworthy that Walmart did not apply a stick (refusing to stock inefficient products) so much as a carrot (offering access to enhanced marketing and product placement) for inexpensive, high-quality, energy-efficient products.

B. Behavioral Plasticity

For activism by institutional investors, I assess behavioral plasticity as the response of companies to investor-led initiatives. For energy-efficient consumer products, I assess behavioral plasticity by sales.

Businesses, especially large ones, respond to concern over environmental and sustainability issues by institutional investors. 70% of the Standard & Poor's 500 ("S&P 500") disclosed their climate-related environmental data to CDP.³⁰ Companies also respond to investor concerns by making public disclosures of environmental impacts and risks,³¹ and firms that make such disclosures subsequently tend to reduce their emissions over time.³² Irrespective of shareholder activism, greater institutional ownership of a firm's shares leads firms to increase socially and environmentally responsible activities.³³ Additionally, greater institutional ownership leads firms to become more responsive to shareholder activism on social responsibility, especially with regard to the environment.³⁴ However, emissions reductions are smaller in energy-intensive firms, such as electric power generating companies,³⁵ which is concerning because those firms tend to have especially high emissions. In addition, there is some evidence that corporate political influence over regulators can enable management to stymie shareholder resolutions.³⁶

Shareholder resolutions are a growing form of private-governance engagement, and even when initiatives on sustainability issues fail to

30. CDP US Report 2017: Key Findings on Governance, ESG and the Role of the Board of Directors, CDP 2 (Dec. 2017), <https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/891/original/CDP-US-Report-2017-v2.pdf?1519227634> [<https://perma.cc/M7CJ-CSNSJ>].

31. Julie Cotter & Muftah M. Najah, *Institutional Investor Influence on Global Climate Change Disclosure Practices*, 37 *AUSTL. J. MGMT.* 169, 185 (2012).

32. Wei Qian & Stefan Schaltegger, *Revisiting Carbon Disclosure and Performance: Legitimacy and Management Views*, 49 *BRIT. ACCT. REV.* 365, 373 (2017).

33. Tao Chen et al., *Institutional Shareholders and Corporate Social Responsibility: Evidence from Two Quasi-Natural Experiments*, *VOLATILITY INST.* 26 (2016), available at <https://papers.ssrn.com/abstract=2924752> [<https://perma.cc/MVY4-WPX3>].

34. *Id.* at 18.

35. *Id.*; Daniel C. Matisoff, *Different Rays of Sunlight: Understanding Information Disclosure and Carbon Transparency*, 55 *ENERGY POL'Y* 579, 588 (2013).

36. Michael Hadani et al., *Corporate Political Activity and Regulatory Capture: How Some Companies Blunt the Knife of Socially Oriented Investor Activism*, 44 *J. MGMT.* 2064, 2086–87 (2018).

attract majority support, they can still have a significant effect on improving corporate performance on those issues.³⁷

The examples discussed above about Walmart's initiatives on CFL and LED light bulbs illustrate that consumers can be influenced to adopt energy-efficient products when high-quality products are conveniently available at reasonable prices. A simple set of design principles has been identified for engaging with individual and household behaviors on energy efficiency, and these can be used to design private-governance measures targeted at the residential sector.³⁸

C. Policy Plasticity

A rapidly growing number of institutional investors are becoming concerned about holding companies accountable for climate-related risks. The CERES Investor Network on Climate Risk and Sustainability includes more than 160 institutional investors, who manage a total of more than \$25 trillion and are working together to promote sustainable practices on water, climate, and energy by the firms they invest in.³⁹ Climate Action 100+ is a coalition of more than 225 institutional investors controlling more than \$26 trillion in assets who have committed to a five-year plan to press the largest corporate greenhouse gas emitters to reduce emissions, disclose their climate-related risks, and adopt environmentally responsible governance.⁴⁰ CDP is a not-for-profit organization that represents more than 800 institutional investors who manage more than \$100 trillion in capital to seek disclosures of environmental impacts, such as greenhouse gas emissions, from thousands of companies.

Institutional investors with longer-term horizons tend to give greater weight in their portfolios to firms with higher environmental and sustainability scores than investors with shorter-term outlooks.⁴¹ This suggests that concern over long-term environmental risks is more significant than philanthropic motives in driving institutional invest-

37. Grewal et al., *supra* note 5, at 2–3; Chen et al., *supra* note 33, at 2.

38. Paul C. Stern et al., *Design Principles for Carbon Emissions Reduction Programs*, 44 ENVTL. SCI. & TECH. 4847, 4847–48 (2010); Michael P. Vandenbergh et al., *Implementing the Behavioral Wedge: Designing and Adopting Effective Carbon Emissions Reduction Programs*, 40 ENVTL. L. REP. 10547, 10547–54 (2010).

39. *Ceres Investor Network*, CERES, <https://www.ceres.org/networks/ceres-investor-network> (last visited Feb. 26, 2018) [<https://perma.cc/7D9G-N63U>]. See also *Ceres Investor Network, Year in Review 2016–2017*, CERES (Apr. 21, 2017), <https://www.ceres.org/resources/reports/ceres-investor-network-year-review> [<https://perma.cc/H8TD-TXJT>].

40. Ed Crooks, *Investors to Push Highest-Emitting Companies to Do More on Climate*, FIN. TIMES (Dec. 12, 2017), <https://www.ft.com/content/beaf6560-df03-11e7-a8a4-0a1e63a52f9c> [<https://perma.cc/SH75-KF3B>].

41. Rajna Gibson Brandon & Philipp Krüger, *The Sustainability Footprint of Institutional Investors* (Swiss Fin. Inst. Research Paper No. 17-05, 2018), https://ecgi.global/sites/default/files/working_papers/documents/finalbrandonkruger1.pdf [<https://perma.cc/SPC3-TY8E>].

tors' activism on environmental issues. This interpretation is reinforced by research that finds managing downside risk drives investments and shareholder activism more than other forms of environmental responsibility.⁴²

The role of long-term horizons and the emphasis on downside risk present challenges for corporate activism as a force to drive emissions reductions, as opposed to adopting more resilient business practices to prepare for climate-related risks. Even when downside risks dominate investor thinking, concern about stranded assets can stimulate investor pressure to reduce use and dependency on fossil fuels. However, most investors continue to focus on short-term risks and returns, which reduces interest in climate-related activism.⁴³ Thus, policy plasticity in institutional shareholder activism significantly depends on investors taking a long-term outlook, which would explain the prominent role of pension funds.

In another example of willingness to engage in active private-environmental governance, investment rating firms and insurers are threatening to deny coverage or lower credit ratings as a tool to compel action, such as adaptation to climate change.⁴⁴ Short-term outlooks, combined with cognitive biases about risk, may lead investors to under-estimate exposure to climate-related risks, which leads some analysts to recommend that financial regulatory agencies and central banks assume active roles in managing financial exposure to climate risks.⁴⁵ Nonetheless, the growth of climate-related investor activism in recent years suggests that even if private governance by investors is inadequate to completely address climate change, it can nonetheless play an important role.

In addition to the examples discussed above of Walmart's private-governance initiatives on consumer products, the rapid move of many major automobile manufacturers to develop electric cars, and even to announce a schedule for phasing out internal combustion vehicles al-

42. Chitru S. Fernando et al., *Corporate Environmental Policy and Shareholder Value: Following the Smart Money*, 52 J. FIN. & QUANTITATIVE ANALYSIS, 2023–51 (2017); Andreas G. F. Hoepner et al., *ESG Shareholder Engagement and Downside Risk*, AM. FIN. ASS'N (Jan. 2018), <http://www.q-group.org/wp-content/uploads/2018/02/SHAREHOLDER-ENGAGEMENT-2018-01-31.pdf> [<https://perma.cc/42VX-VRFZ>].

43. CASEY ASPIN, *THE MISSING 55%: VOTING RECORDS FOR THE 10 LARGEST UTILITY INVESTORS SHOW DIVERGENCE ON CLIMATE RISK, PREVENTABLE SURPRISES 2* (2017), available at <https://preventablesurprises.com/wp-content/uploads/2017/11/Missing-55-V7-1.pdf> [<https://perma.cc/SM9N-4NFS>]; Nicholas Silver, *Blindness to Risk: Why Institutional Investors Ignore the Risk of Stranded Assets*, 7 J. SUSTAINABLE FIN. & INV. 99 (2017).

44. Mathiesen, *supra* note 7, at 454; Nesbit, *supra* note 8; Kollewe, *supra* note 9; Ralph, *supra* note 10.

45. Emanuele Campiglio et al., *Climate Change Challenges for Central Banks and Financial Regulators*, 8 NATURE CLIMATE CHANGE 462, 464 (2018).

together, illustrates powerful interest by at least some firms in setting emissions standards that far exceed public regulations.⁴⁶

III. CARROTS AND STICKS IN PRIVATE GOVERNANCE

A. *Divestment versus Engagement*

The announcement in 1977 of the Sullivan Principles—a voluntary code of conduct for businesses operating in apartheid South Africa—is often cited as the moment when corporate social responsibility entered the mainstream.⁴⁷ However, others viewed the Sullivan Principles as a disingenuous attempt to provide a semblance of moral legitimacy to firms doing business in South Africa.⁴⁸ Fierce disputes centered on questions of whether institutional investors should divest their funds from all corporations doing business in South Africa, selectively divest from firms that did not comply with the Sullivan Principles, or engage as investors to persuade companies to improve their conduct and exert pressure on the South African government to abolish apartheid.⁴⁹ A number of contemporary analyses as well as post-apartheid historical studies argued that the amount of funds being divested were far too small to appreciably weaken the apartheid regime.⁵⁰ However, others argued that focusing on the dollar value of

46. Jack Ewing, *Volvo, Betting on Electric, Moves to Phase Out Conventional Engines*, N.Y. TIMES (July 5, 2017), <https://www.nytimes.com/2017/07/05/business/energy-environment/volvo-hybrid-electric-car.html> [<https://perma.cc/4BLY-33SX>]; Peter Holley, *Death of Gas and Diesel Begins as GM Announces Plans for All-Electric Future*, WASH. POST (Oct. 2, 2017), <https://www.washingtonpost.com/news/innovations/wp/2017/10/02/death-of-diesel-begins-as-gm-announces-plans-for-all-electric-future/> [<https://perma.cc/EGY3-T8PR>]; Bill Vlasic & Neal E. Boudette, *G.M. and Ford Lay Out Plans to Expand Electric Models*, N.Y. TIMES (Oct. 2, 2017), <https://www.nytimes.com/2017/10/02/business/general-motors-electric-cars.html> [<https://perma.cc/U69D-VL84>].

47. S. Prakash Sethi & Oliver F. Williams, *Creating and Implementing Global Codes of Conduct: An Assessment of the Sullivan Principles as a Role Model for Developing International Codes of Conduct—Lessons Learned and Unlearned*, 105 BUS. & SOC'Y REV. 169, 172 (2000) (“[T]he Sullivan Principles were the turning point that crystalized the then ongoing debate as to the changing societal expectations of corporate conduct [T]he locus of debate permanently shifted to how and to what extent corporations should be held accountable for the societal impact of their business activities and the benefits they generate and harms they cause to various elements of society.”).

48. Patricia Arnold & Theresa Hammond, *The Role of Accounting in Ideological Conflict: Lessons from the South African Divestment Movement*, 19 ACCT., ORGS. & SOC'Y 111, 115 (1994) (“[T]he Sullivan accounting system was not developed in response to pluralist demands for corporate accountability. . . . To the contrary, the accounting system was used by corporations to buttress the progressive force argument and defend business interests in South Africa against demands for withdrawal.”).

49. William H. Kaempfer et al., *Divestment, Investment Sanctions, and Disinvestment: An Evaluation of Anti-Apartheid Policy Instruments*, 41 INT'L ORG. 457 (1987).

50. *Id.* at 467–72; Arnold & Hammond, *supra* note 48; Rebecca Leber, *Divestment Won't Hurt Big Oil, and That's OK*, NEW REPUBLIC (May 20, 2015), <https://newrepublic.com/article/121848/does-divestment-work> [<https://perma.cc/T3UR-FQKN>]; Wil-

divestiture missed the political power of divestment as a symbolic act that could shape international perceptions of apartheid South Africa as a pariah state.⁵¹

Similar disputes are taking place today as institutional investors face growing pressure to divest from fossil-fuel companies and large greenhouse gas emitters. Some invoke the Sullivan Principles as an example of constructive engagement for change and as a benchmark against which to evaluate investor and corporate codes of conduct with regard to climate change.⁵² Others argue that, similarly to divestment from South Africa, divestment from fossil-fuel companies is a powerful political tool whose symbolic impact may be far more important than its financial impact.⁵³

Analyses of divestment versus engagement often invoke Hirschman's *Exit, Voice, and Loyalty* and identify divestment as a form of exit and engagement as a form of voice.⁵⁴ Exit can serve different goals: It can serve to disassociate investors from firms they find morally repugnant or embarrassing to be publicly associated with. This was an important motive in early socially-responsible investment ("SRI") movements and remains so among many religiously affiliated institutional investors.⁵⁵ Others advocate exit instrumentally, with the goal of changing corporate behavior.⁵⁶ Voice serves the goal of changing behavior and can proceed in both formal and informal modes.⁵⁷

liam MacAskill, *Does Divestment Work?*, NEW YORKER (Oct. 20, 2015), <https://www.newyorker.com/business/currency/does-divestment-work> [https://perma.cc/SX3Z-RL56].

51. *Id.*

52. Richard J. Millar et al., *Principles to Guide Investment Towards a Stable Climate*, 8 NATURE CLIMATE CHANGE 1, 2 (2018).

53. Leber, *supra* note 50; MacAskill, *supra* note 50, at 2; see Atif Ansar et al., *Stranded Assets and the Fossil Fuel Divestment Campaign: What Does Divestment Mean for the Valuation of Fossil Fuel Assets?*, STRANDED ASSETS PROGRAMME 1, 14 (Oct. 2013), <http://www.smithschool.ox.ac.uk/publications/reports/SAP-divestment-report-final.pdf> [https://perma.cc/D2YR-MUB9].

54. Alex Gorman, Note, *Exit vs. Voice: A Comparison of Divestment and Shareholder Engagement*, 72 N.Y.U. ANN. SURV. AM. L. 113, 186 (2017); Michael R. Bashshur & Burak Oc, *When Voice Matters: A Multilevel Review of the Impact of Voice in Organizations*, 41 J. MGMT., 1530–31 (2015); Terry McNulty & Donald Nordberg, *Ownership, Activism and Engagement: Institutional Investors as Active Owners*, 24 CORP. GOVERNANCE 346, 347, 349 (2016); Cundill et al., *supra* note 5, at 606–07, 613–14; Goodman et al., *supra* note 14, at 193–96.

55. Proffitt & Spicer, *supra* note 4, at 166–67; Gorman *supra* note 54, at 126–27.

56. Ayling & Gunningham, *supra* note 12, at 141; see Gorman, *supra* note 54, at 118–20; Cundill et al., *supra* note 5, at 612, 619; Kaempfer et al., *supra* note 49, at 459.

57. Andrea Marandino, *Shareholder Activism on Climate Change: Strengths and Limitations of Resolutions, Engagement, and Fossil Fuel Divestment* 13, 21–22 (Dec. 16, 2013) (unpublished M.Sc. thesis, University of London), <http://www.lccge.bbk.ac.uk/publications-and-resources/docs/Andrea-Marandino.pdf> [http://perma.cc/539H-Q84U] (distinguishing shareholder resolutions, which are debated publicly, from informal engagement through private dialogue behind closed doors).

Exit is often criticized as a crude tool—“all stick, no carrot”⁵⁸—with little nuance and prone to backfiring. If demand for shares is inelastic, and if activists constitute a small fraction of investors, then divestment will not affect a firm’s market value. Therefore, the effect of an exit would largely be to remove dissidents from the conversation without providing any offsetting financial pressure. This would ultimately reduce, rather than increase, the incentives for the firm to change.⁵⁹ Economic investigations of the impacts of divestment on firms doing business in apartheid South Africa in the 1980s and 90s, and on fossil-fuel companies in recent years, find no important impact of divestment campaigns on share prices.⁶⁰ Other analyses produce results that are more optimistic about the impacts of divestment, but even they do not predict significant impacts on share prices until a significant fraction (around 10% or more) of the international investment market divests from the targeted shares.⁶¹

Proponents of divestment argue that the most important and influential consequences of divestment are not its direct impacts on share prices, but the message it sends.⁶² Divestments by large investors tend

58. Gorman, *supra* note 54, at 151.

59. *Id.* at 155. See also HIRSCHMAN, *supra* note 14, at 24, 45 (noting that exit by consumers can backfire) (“[I]f demand is highly inelastic with respect to quantity change, revenue losses will be quite small and the firm will not get the message that something is amiss. . . . [M]anagement . . . may be less sensitive to the loss of revenue due to the switch of customers to a [competitor] than to . . . protests by customers who ‘raise hell.’”).

60. Robert J. Shapiro & Nam D. Pham, *The Financial Returns from Oil and Natural Gas Company Stocks Held by American College and University Endowments*, SONECON 4 (Dec. 2012), available at <http://www.api.org/~media/files/news/2012/12-december/api-report-industry-returns-for-college-university-endowments.pdf> [https://perma.cc/CC94-JZ5F] (reporting that during a decade in which college and university endowments reduced their holdings of oil and natural gas stocks, those stocks outperformed other asset classes held by the endowments); Siew Hong Teoh et al., *The Effect of Socially Activist Investment Policies on the Financial Markets: Evidence from the South African Boycott*, 72 J. BUS. 35, 35 (1999) (finding that divestment and boycotts of firms doing business in apartheid South Africa had “little visible effect on the financial markets”); Kaempfer et al., *supra* note 49, at 462 (finding no impact of divestment on share prices of firms doing business in apartheid South Africa).

61. Gorman, *supra* note 54, at 156–57.

62. Ayling & Gunningham, *supra* note 12, at 134–35 (“[T]he limited direct impact of the divestment movement on public companies is not a deterrent to campaigners, because the indirect effect of divestment could be significant. . . . Initially, the [divestment] movement seeks to raise awareness of climate change and the role of the fossil fuel extracting companies in it.”); Leber, *supra* note 50 (“If divestment campaigners’ only aim were to move markets, [critics would] have a point Divestment is not a strategy itself, but a useful tactic for driving home the message of the broader campaign: . . . the message is how the world needs to transition away from fossil fuels.”) (noting that with campaigns to divest from firms doing business in South Africa and from tobacco companies, “[f]inancial hardship was never the goal; the goal was political action.”).

to get significant media coverage,⁶³ which can damage companies' reputations.⁶⁴

However, it is also important to recognize that comparisons between anti-apartheid divestment campaigns and climate divestment campaigns often elide a crucial difference: Opponents of apartheid only wanted companies to relocate their operations outside of South Africa, whereas climate activists want fossil-fuel companies to fundamentally change their core business.⁶⁵ Thus, opposition by fossil-fuel companies is far greater than the opposition by companies doing business with South Africa was.

Voice-centered engagement offers greater opportunity for nuance and give-and-take than divestment. Active trading in shares may produce a background rate of apolitical financially motivated exit that is large enough to obscure politically motivated acts of exit (divestment). Not only among investors but more broadly throughout society, voice has been an under-utilized response to dissatisfaction. Thus, voice is more likely to be noticed when it is used.⁶⁶ Shareholder resolutions were rarely used before the 1980s, but the use of resolutions grew rapidly with the rise of institutional investors.⁶⁷ The last few decades have seen especially rapid growth in the use of shareholder resolutions on ESG issues, which represent 40% of all shareholder proposals.⁶⁸ While most ESG proposals fail to win majority support, they are gaining support rapidly, with notable gains in climate-related resolutions (support for ESG proposals rose from 8% in 1999 to 21% in 2013; support for environmental proposals rose from 18% in 2015 to 29% in 2017; proposals related to climate change received an average of 33% with three passing).⁶⁹ Remarkably, even when ESG pro-

63. See John Schwartz, *Rockefellers, Heirs to an Oil Fortune, Will Divest Charity of Fossil Fuels*, N.Y. TIMES (Sep. 21, 2014), <https://www.nytimes.com/2014/09/22/us/heirs-to-an-oil-fortune-join-the-divestment-drive.html> [<https://perma.cc/Z5EA-X4TW>].

64. Ayling & Gunningham, *supra* note 12, at 145 (“Removal of fossil fuel companies’ social license to operate, through a process of reputational damage and stigmatization, is a fundamental aim of the divestment movement.”).

65. Chelsie Hunt et al., *A Comparative Analysis of the Anti-Apartheid and Fossil Fuel Divestment Campaigns*, 7 J. SUSTAINABLE FIN. INVEST. 64, 64–81 (2016).

66. HIRSCHMAN, *supra* note 14, at 31–33, 70–71 (“[F]or voice to function properly it is necessary that individuals possess reserves of political influence which they can bring into play when they are sufficiently aroused. That this is generally so—that, in other words, there is considerable slack in political systems—is well recognized.”).

67. Gillan & Starks, *supra* note 4, at 55–73.

68. *2017 Proxy Season Review*, SULLIVAN & CROMWELL 21 (2017), https://www.sullcrom.com/siteFiles/Publications/SC_Publication_2017_Proxy_Season_Review.pdf [<https://perma.cc/7P4E-E8MH>]; Grewal et al., *supra* note 5, at 7 (reporting that 40% of shareholder initiatives in 2017 were ESG-related).

69. Grewal et al., *supra* note 5, at 5 (reporting the increase in support of ESG proposals); *2017 Proxy Season Review*, *supra* note 68, at 21 (reporting support for environmental proposals); *Proxy Season 2017: Analysing the Trends*, PRINCIPLES FOR RESPONSIBLE INV. (July 24, 2017), <http://www.unpri.org/news-and-press/proxy-season-2017-analysing-the-trends/355.article> [<https://perma.cc/SGH2-U7NT>] (reporting that climate-related proposals received an average of 33% support and listing three that

posals fall far short of majority support, they can still have impact, with management frequently adopting some or even all of the proposed actions if a significant minority of shareholders appear to care about the issue.⁷⁰

The rapid growth of support for climate-related resolutions, and the fact that management often adopts actions from failed proposals, attests that management often views such proposals favorably and shares the concerns of the shareholders who submit these proposals. However, there appear to be opportunities for similar engagement that are not being pursued. Most climate-related proposals fall into two categories: calls for the company to disclose climate-related risks (including the risks associated with a rapid global transition to clean energy sources) or calls to reduce its greenhouse gas emissions.⁷¹ Disclosure of emissions and risks is likely a sensitive subject with management because they emphasize negative aspects of the firm and may damage the firm's reputation when they are made public. The market value of large companies has gone from being 83% tangible assets and 17% intangible in 1975, to 16% tangible and 84% intangible in 2015, with an estimated quarter or more of that residing in goodwill, reputation, and brand value.⁷²

Damage to a firm's reputation can have serious consequences to its value, and the greater the ratio of intangible to tangible value, the greater this vulnerability may be. Uber's value is almost entirely intangible (its intellectual property and its network of drivers and customers), and when it faced a wave of bad publicity in 2017 over revelations about its mistreatment of women employees and its CEO's treatment of Uber drivers, Uber's favorability dropped sharply and its market share dropped from 90% to 75%.⁷³ Similarly, the market value of United Airlines temporarily dropped by \$1 billion following news coverage of a passenger being badly beaten and forcibly removed from a plane.⁷⁴ Environmental performance also affects the value of intangible assets: Small changes in the legal release of toxic

passed); see also Robert Monks et al., *Shareholder Activism on Environmental Issues: A Study of Proposals at Large US Corporations (2000–2003)*, 28 NAT. RES. FORUM 317, 321 (2004) (noting that even in 2000–2003, among ESG proposals, those related to climate change and renewable energy received the strongest support).

70. See Grewal et al., *supra* note 5, at 12–13.

71. *Proxy Season 2017: Analysing the Trends*, *supra* note 69; Monks et al., *supra* note 69, at 318, 325–26 (reporting that most climate-related shareholder resolutions call for disclosing business risks associated with climate change).

72. Cate M. Elsten & Nick Hill, *Intangible Asset Market Value Study?*, 52 J. LICENSING EXECUTIVES SOC'Y 245, 245 (2017).

73. Marco della Cava, *Uber Has Lost Market Share to Lyft During Crisis*, USA TODAY (Jun. 13, 2017, 10:23 AM), <https://www.usatoday.com/story/tech/news/2017/06/13/uber-market-share-customer-image-hit-string-scandals/102795024/> [<https://perma.cc/K8TW-D7EN>].

74. Adam Shell, *United Airlines Stock Loses Altitude, Sheds \$255 Million in Value*, USA TODAY (Apr. 11, 2017, 1:05 PM), <https://www.usatoday.com/story/money/markets/2017/04/11/united-stock-falls/100325694/> [<https://perma.cc/PV2X-MTWZ>].

substances can affect the value of a company's intangible assets by tens of millions of dollars.⁷⁵ Thus, it would not be surprising if management worried that disclosing emissions or risks from climate change might reveal damaging information about the company that would hurt its reputation and require it to undertake costly measures to reduce emissions or mitigate climate-related risks.

The *affect heuristic* in risk perception is driven by an unconscious desire for consistency: If one aspect of a thing is good, then people will tend to believe that every aspect is good, and they will downplay or even ignore harmful aspects.⁷⁶ Similarly, if one aspect is bad, they will downplay or ignore any good qualities. This heuristic may amplify the negative reaction to shareholder initiatives: If there are benefits as well as costs to adopting a shareholder initiative, but the manager thinks primarily of the negative aspects, she may under-estimate the benefits or neglect them altogether. Negative views of the consequences of disclosure may also activate *solution aversion*, a psychological phenomenon in which a person faced with a problem for which the only viable solution is repugnant will tend to deny that the problem exists.⁷⁷ Solution aversion is believed to be a significant contributor to the rejection of climate science by members of the public who dislike big government and believe that the only solutions to climate change will involve massive expansion of government regulations.⁷⁸

Where voice meets resistance, the implied or explicit threat of exit can be important. Indeed, Hirschman writes of exit and voice as two complementary tools that work best when balanced.⁷⁹ However, if exit and voice are both wielded with an emphasis on the negative—risks, costs, and shameful disclosures—they are unlikely to have as powerful an effect as they could if they complemented a lighter, more optimistic note.

B. *Fiduciary Responsibilities*

Exit is relatively straightforward for individual investors, but fund managers have fiduciary responsibilities to investors.⁸⁰ Sjöström argues that the duty to act in the best interest of the investors encompasses not just financial interests but also environmental, social, and ethical concerns.⁸¹ For funds with an explicit focus on social or envi-

75. Shameek Konar & Mark A. Cohen, *Does the Market Value Environmental Performance?*, 83 REV. ECON. & STAT. 281 (2001).

76. Paul Slovic et al., *Risk as Analysis and Risks as Feelings: Some Thoughts about Affect, Reason, Risk, and Rationality* 24 SOC'Y RISK ANALYSIS 311, 314–15 (2004).

77. Troy H. Campbell & Aaron C. Kay, *Solution Aversion: On the Relation Between Ideology and Motivated Disbelief*, 107 J. PERSONALITY SOC. PSYCHOL. 809, 809 (2014).

78. VANDENBERGH & GILLIGAN, *supra* note 15, at 3–4, 9.

79. HIRSCHMAN, *supra* note 14, at 120–26.

80. See Sjöström, *supra* note 4, at 151.

81. *Id.* at 142.

ronmental responsibility, investors may be assumed to share the values of the fund; but for pension funds, the manager or trustees cannot assume that the beneficiaries share their values on social or environmental issues.⁸²

However, there is a growing sense that when climate change and other environmental risks threaten the long-term performance of an investment, then not only do fund managers have the discretion to consider climate-related risks, but they may even be obliged to do so. A 2002 report, *Value at Risk*, by the Ceres organization, asserted that:

Neglecting to assess [climate] risks is neither prudent nor responsible. The more information on climate-related damage accumulates, the more the refusal to examine these risks carries the potential for breach of fiduciary duty. . . . To fulfill their fiduciary duties, investors and directors now must understand which industry sectors and companies are exposed to the greatest risks, what measures if any are being taken to reduce them, and how effective they are likely to be.⁸³

In practice, pension funds appear to be interpreting their discretion in the matter of climate risks to allow the fund manager to exercise voice, but not exit.⁸⁴ However, without exit as a realistic option, voice may lose its power. Thus, pension funds and other funds managed on behalf of beneficiaries—who may not be assumed to have intrinsic concern over climate change—leave their managers in a position of limited discretion and power to use the fund’s shares for climate activism.

C. *Exit, Voice, and Carrots*

A great deal of opposition to reducing emissions of greenhouse gases and other dangerous pollutants may derive from the affect heuristic. It is common to assume that reducing emissions must be difficult and expensive. When thinking of the cost and difficulty, it is difficult to remind oneself that there are beneficial aspects to using less fossil fuel.⁸⁵ This may explain why so many businesses fail to no-

82. *Id.* at 141.

83. INNOVEST STRATEGIC VALUE ADVISORS, INC., *VALUE AT RISK: CLIMATE CHANGE AND THE FUTURE OF GOVERNANCE* 1 (2002).

84. RHODE ISLAND TREASURY ENGAGEMENT OVERVIEW 2017 SHAREHOLDER SEASON, *supra* note 6 (reporting shareholder engagement on climate issues by the Rhode Island pension fund); BINSTED ET AL., *supra* note 6, at 20 (“Divestment or clean energy investment targets are not supported by [Maryland State Retirement and Pension System] staff, while an evaluation of specific asset classes . . . is recommended for the next regular allocation review.”).

85. See generally Greer K. Gosnell et al., *A New Approach to an Age-Old Problem: Solving Externalities by Incenting Workers Directly* 7, 19 (Nat’l Bureau of Econ. Research, Working Paper No. 22316, 2016), <http://www.nber.org/papers/w2316> [<https://perma.cc/Q75E-C4M6>].

tice for many years that they have opportunities to simultaneously cut pollution emissions and save a great deal of money.

Even though jet fuel is one of the largest expenses in the airline industry, Virgin Atlantic Airlines went for many years without realizing that it was wasting thousands of tons of fuel every year because their pilots did not have a good sense of how efficiently they were flying.⁸⁶ Then in 2014, Virgin partnered with a team of economists who provided the pilots with feedback about their fuel usage and incentives to safely conserve fuel.⁸⁷ Shortly after this program was launched, the pilots began saving the equivalent of around 700 tons per year of fuel, which reduced the airline's CO₂ emissions by nearly 2,000 tons per year, while saving around \$600,000 annually.⁸⁸ Moreover, pilots reported that participating in the fuel-efficiency exercise improved their job satisfaction.⁸⁹

In 1994, as the Copenhagen Protocol to phase out ozone-destroying substances went into effect, the telecommunications company Nortel needed to find a replacement for the chlorofluorocarbon chemical that it had used for many years to clean electronic circuit boards.⁹⁰ It discovered that it could do the job just as well with water and a biodegradable citrus-based product, and after spending \$1 million to retool its assembly line, it saved \$4 million over the next three years.⁹¹ Vandenberg and Gilligan list a number of other cases where opportunities to save money while reducing consumption of energy and emissions of pollution went unnoticed until concern over the environment led a firm to examine its environmental footprint.⁹²

Pessimism about "rebound effects," in which inexpensive energy-efficient technology would stimulate greater use of the technology and thus undermine the intended reductions, led to a prediction that the introduction of solid-state lighting (such as LEDs) would cause per-capita electricity consumption to rise by roughly 60% between 2005 and 2030.⁹³ Instead, per-capita electricity consumption plateaued around 2010 and then began to drop.⁹⁴

These examples of neglect or undue pessimism about the prospect of reducing energy consumption and pollution, together with CDP's report that ninety-nine large companies reduced their supply chains'

86. *See id.* at 23.

87. *Id.* at 6–7.

88. *Id.* at 28.

89. *Id.* at 28.

90. RICHARD ELLIOT BENEDICK, *OZONE DIPLOMACY: NEW DIRECTIONS IN SAFEGUARDING THE PLANET* 226, 232 (1998).

91. BINSTED ET AL., *supra* note 6, at 232; Pamela Wexler, *Saying Yes to "No Clean"*, in *OZONE PROTECTION IN THE UNITED STATES: ELEMENTS OF SUCCESS* 92–93 (Elizabeth Cook ed., World Resources Institute, 1996).

92. VANDENBERGH & GILLIGAN, *supra* note 15, at 4.

93. J. Y. Tsao et al., *Solid-State Lighting: An Energy-Economics Perspective*, 43 J. PHYSICS D 1, 6–7 (2010).

94. Davis, *supra* note 28.

CO₂ emissions by more than 550 million metric tons per year,⁹⁵ leads me to believe that there is vast opportunity to reduce pollution and greenhouse gas emissions through cost-saving energy efficiency.

Walmart's experience selling energy-efficient light bulbs and the investments and commitments that automobile manufacturers are making to transition from gasoline to electric vehicles also suggest that there are attractive business opportunities for bringing convenient energy-efficiency and pollution-reducing technology into people's homes and garages.

Beyond energy efficiency, corporate interest in renewable energy is growing rapidly. More than twenty-two Fortune 500 companies have pledged over the coming years to purchase renewable power equal to their entire energy consumption.⁹⁶ Many companies, like Apple, see this as an opportunity not only to protect the environment, but also to save hundreds of millions of dollars compared to buying conventional electricity.⁹⁷

It may well be the case that management often starts from an assumption that reducing emissions of greenhouse gases and other pollutants must be expensive and bad for business, and because of that assumption, management does not look for opportunities to save money while also reducing emissions. Indeed, some evidence for this is found in the discovery of a wide-spread "brownwashing" phenomenon. Greenwashing occurs when a company exaggerates its accomplishments and misleads investors and consumers to believe that its environmental impact is smaller than it really is. Brownwashing is the mirror image and occurs when a company succeeds in reducing emissions, adopting more sustainable practices, etc., but does not publicize the achievement.⁹⁸ Three possible explanations are advanced for brownwashing: First, a company may perceive that investors believe reducing greenhouse gas emissions hurts profits.⁹⁹ There is some evidence for this interpretation in the observation that Chinese companies winning environmental awards do not see any benefit to their

95. CDP, *supra* note 3, at 3, 6.

96. Brad Plumer, *A Year After Trump's Paris Pullout, U.S. Companies Are Driving a Renewables Boom*, N.Y. TIMES (June 1, 2018), <https://www.nytimes.com/2018/06/01/climate/companies-renewable-energy.html> [<http://perma.cc/X6W6-Y5HH>]; D. Manning et al., *Private Procurement, Public Benefit: Integrating Corporate Renewable Energy Purchases with Utility Resource Planning*, CTR. FOR NEW ENERGY ECON. 2 (2016), available at http://info.aee.net/hubfs/PDF/CNEE_Corporate%20Procurement.pdf [<https://perma.cc/6N7H-SSAH>].

97. Diane Cardwell, *Apple Becomes a Green Energy Supplier, With Itself as Customer*, N.Y. TIMES, (Aug. 23, 2016), <https://www.nytimes.com/2016/08/24/business/energy-environment/as-energy-use-rises-corporations-turn-to-their-own-green-utility-sources.html> [<https://perma.cc/Y6VW-PHE9>].

98. Eun-Hee Kim & Thomas P. Lyon, *Greenwash vs. Brownwash: Exaggeration and Undue Modesty in Corporate Sustainability Disclosure*, 26 ORG. SCI. 633, 705 (2014).

99. *Id.* at 750.

share prices and may even see significant reductions.¹⁰⁰ A second interpretation considers consumers and observes that many consumers believe that environmentally-friendly products are inferior in quality.¹⁰¹ A third possibility is reputational insurance: Large firms may be reluctant to make prominent claims for their environmentally-beneficial actions for fear of drawing accusations of greenwashing or hypocrisy but may hold their beneficial actions in reserve to rebut future criticism.¹⁰²

Private governance could seize this opportunity to provide a more optimistic message than is sent by a narrow focus on the harmful things large corporations do. In addition to demanding disclosures of harmful activity, institutional investors could propose systemic audits to uncover unnoticed opportunities for cost-saving energy-efficiency gains, reduction of waste streams, and purchases of inexpensive, clean power. One might hope that framing emissions reduction in terms of potential gains to the bottom line could engage the optimistic branch of the affect heuristic and suffuse the audit with a sense of hope that opportunities for cost-saving could be found rather than dread that embarrassing data will need to be disclosed.

It is unlikely that this positive, collaborative mode of engagement will work in all cases. Not all emissions reductions will be profitable, and when cutting emissions entails cutting profits as well, conflict—both between shareholders and management and among shareholders themselves—will be almost inevitable. But the record of success in reducing emissions through discovered opportunities for efficiency, both in households and businesses, suggests that a considerable reduction in emissions will be possible before those conflicts become necessary.

Private governance is not only an activity for institutional investors. Companies that sell goods and services to the public can do a lot to make energy efficiency and conservation easy and attractive to individuals and households. The average United States household could reduce its energy consumption by 38% without any major changes of lifestyle by taking a number of simple, voluntary steps, most of which would pay themselves back or even generate net savings.¹⁰³ Many people do not take these actions because barriers—such as lack of knowledge, inconvenience, or access to financing—prevent them.

100. Thomas Lyon et al., *How Do Investors Respond to Green Company Awards in China?*, 94 *ECOLOGICAL ECON.* 1, 2 (2013).

101. Kim & Lyon, *supra* note 98, at 755.

102. A possible example of this is McDonald's, which only buys fish certified by the Marine Stewardship Council as sustainably caught but does not publicize this fact. See Michael P. Vandenberg, *Private Environmental Governance*, 99 *CORNELL L. REV.* 129, 150 (2013).

103. Thomas Dietz et al., *Household Actions Can Provide a Behavioral Wedge to Rapidly Reduce U.S. Carbon Emissions*, 106 *PNAS* 18452, 18452 (2009), <http://www.pnas.org/content/pnas/106/44/18452.full.pdf> [<https://perma.cc/Z9A2-HLPR>].

Analysis of best practices in past programs to promote energy efficiency and conservation finds that well-designed initiatives to make it attractive and convenient to adopt energy-efficiency measures at home would likely reduce the average household's greenhouse gas emissions by 20%.¹⁰⁴

Home energy efficiency has been studied extensively, and it is clear that simple—but appropriately designed—incentives can work to stimulate efficiency improvements. Energy efficiency in businesses is much more poorly understood, and there is room for new research on whether framing shareholder resolutions in terms of opportunity and incentive, rather than scolding, would make them more appealing to management and more effective at accomplishing activist investors' goals.

IV. CONCLUSION

Shareholder activism can function as a form of private environmental governance and it is rapidly growing in both support and activity, especially for issues related to climate change. Individuals and households can be effectively motivated to reduce their energy consumption and greenhouse gas emissions with simple interventions that make it attractive and convenient to do so. It is unclear whether a similar approach of framing shareholder resolutions to improve corporate energy efficiency would be similarly appealing to management, but at a time when federal regulations to reduce emissions seem very unlikely, investigating this line of action seems worthwhile.

104. *Id.*