
INSTITUTIONAL INVESTORS AS SHORT SELLERS?

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ABSTRACT

Short selling has the potential to improve the efficiency and fairness of equity markets. Yet institutional investors face both private and regulatory constraints to short selling. This Article documents these obstacles and considers the potential benefits of removing them. We advocate that institutional investors engage in more short selling as part of overall net-long equity strategies, such as a leveraged passive equity index combined with an actively managed short position of a size comparable to the amount of leverage.

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INTRODUCTION

Short selling¹ accounts for roughly one quarter of all U.S. stock market trading.² Yet institutional investors are largely absent from this important part of the market.³ We ask why. We also explore how social welfare might be improved if institutional investors become more involved in short selling.

Specifically, we suggest that institutions incorporate short selling into their strategies, not necessarily by taking net-short positions, but instead by combining leveraged long equity index positions with smaller actively managed short portfolios. For example, an institution with \$100 million under management might buy \$110 million of an equity index and also hold \$10 million of short positions. To the extent institutions continue to engage directly or indirectly in active management—a strategy we recognize is controversial—we suggest that they consider shifting the active component of their strategy away from exclusively long positions and instead in the direction of new short positions. Rather than focusing exclusively on which stocks are likely to outperform the market, they could also focus more on the stocks that will not.

The core of our argument is that institutional investors obtain negative information about companies and markets, but that this information does not become fully reflected in market prices. Our argument depends on two assumptions, both of which we explore in detail. First, we assume that there are a variety of reasons, both behavioral and regulatory, why different categories of institutional investors do not engage in short selling even when it could be financially beneficial for them to do so. Second, we assume that institutional investor reluctance to engage in short selling impacts market prices. As described below, various evidence and arguments support both of these assumptions.

As an illustrative example, consider a manager of an actively traded mutual fund who regularly obtains a range of information about different companies. It is straightforward for the manager to create a new long position when she receives positive information: she simply buys stock. Likewise, it would not be unusual for the manager to sell an existing position based on negative information. But if the manager goes one step further, and suggests selling short a company's shares based on negative information, she will likely face greater resistance. To the extent the fund manager is reluctant to sell short, some

¹ In a typical short position, an investor (the "short seller") borrows shares she does not yet own and sells those shares at current market prices; the short seller later "covers" the short position by buying shares in the future and returning the borrowed shares. See *Short Sales*, U.S. SEC. & EXCH. COMM'N, <https://www.sec.gov/answers/shortsale.htm> [<https://perma.cc/2LJ9-Q8LP>] (last modified Apr. 13, 2015). The short seller thus bets that the share price will decline between her initial sale and later purchase.

² See Eric K. Kelly & Paul C. Tetlock, *Retail Short Selling and Stock Prices*, 30. REV. FIN. STUD. 801, 806 n.5 (2017).

³ See *infra* Part I (discussing reasons why institutional investors are absent from short selling market).

negative information might become “bottled up” within the fund, and therefore not reflected in market prices.⁴ This is the kind of scenario we explore.

There are some obvious reasons for institutional investors to avoid short selling. First, it is costly.⁵ Short sellers must determine which companies to bet against and then pay a loan fee to borrow shares to create and maintain their short positions. They must post collateral, pay ongoing margin costs, and comply with applicable regulatory requirements. Most fundamentally, to the extent the stock market overall generates positive returns, short sellers on average can expect, other things equal, to lose money.

Short selling is also risky.⁶ Unlike long positions, which can at most lose the amount invested in the long position if the stock drops to \$0, the potential loss on a short position is infinite, growing as stock prices increase without bound. Short sellers also risk margin calls, regulatory changes, potential increases in loan fees, negative publicity, and legal actions against them when they take short positions.⁷ Finally, if shares are not available to borrow, a short seller might be forced to close out a position early at a loss, even if that position was part of an arbitrage strategy that ultimately would have been profitable.

In addition, short selling historically has faced a variety of cultural and regulatory obstacles, which some scholars have labeled “indirect short-sale constraints.”⁸ To the extent these constraints apply to institutional investors, they can limit the ability of sophisticated investors to trade against the sentiment of noise traders.⁹ When societal norms against short selling are pervasive and salient, they can deter the managers of institutional investors from engaging in the practice.

The costs and risks of short selling reduce market efficiency. They impose limits to arbitrage that reduce liquidity, increase volatility, and skew the

⁴ We are grateful to Professor Eric Roiter, former general counsel of Fidelity, for confirming our observation about fund managers’ reluctance to sell short based on negative information, in part because fund managers fear the repercussions of having to inform mutual fund clients that they lost money in a rising market based on short positions. As we describe below, a mutual fund that remained net 100% long (e.g., long 120%/short 20%) potentially could avoid some of these problems.

⁵ See MANAGED FUNDS ASS’N, AN INTRODUCTION TO SHORT SELLING 7-12 (2018), http://hedgefundamentals.org/wp-content/uploads/2018/05/An-Introduction-to-Short-Selling_White-Paper.pdf [<https://perma.cc/N3XG-UKY>] (describing costs arising from short selling).

⁶ See *id.* at 14-15 (identifying risks posed by short selling).

⁷ See, e.g., Ian Appel, Jordan Bulka & Vyacheslav Fos, *Public Short Selling by Activist Hedge Funds*, HARV. L. SCH. F. ON CORP. GOVERNANCE & FIN. REG. (Oct. 1, 2018), <https://corp.gov.law.harvard.edu/2018/10/01/public-short-selling-by-activist-hedge-funds/> [<https://perma.cc/HH57-BV8W>] (noting that disclosure of short selling can result in regulatory scrutiny, libel suits, and other costs).

⁸ See Stefan Nagel, *Short Sales, Institutional Investors and the Cross-Section of Stock Returns*, 78 J. FIN. ECON. 277, 278 (2005).

⁹ See *id.* at 277 (noting “[o]wnership by passive investors with large stock lending programs partly mitigates” cross-sectional stock return anomalies).

available information about individual companies, thereby leading to less accurate stock prices.¹⁰ For decades, scholars have demonstrated that constraints on short selling lead to mispricing and anomalies.¹¹ Whereas managers have sharp incentives to discover and disclose positive information, the same incentives do not exist for negative information; the various constraints on short selling, including costs and risks, discourage the private discovery and disclosure of negative information.¹² More generally, when a portion of the distribution of expectations about a company is limited, because of the various constraints on short selling, stock prices are less likely to reflect the full array of expectations and are therefore less likely to be informationally efficient.¹³

Institutional investors have the potential to engage in short selling in a variety of ways, but the relationship between short selling and institutional investors is largely unexplored in the literature.¹⁴ The dearth of scholarship about

¹⁰ See Joseph E. Engelberg, Adam V. Reed & Matthew C. Ringgenberg, *Short-Selling Risk*, 73 J. FIN. 755, 756 (2018) (finding that stocks with more short-selling risk have lower returns, less price efficiency, and less short selling); see also U.S. SEC. & EXCH. COMM'N, SHORT SALE POSITION AND TRANSACTION REPORTING 135 (2014), <https://www.sec.gov/files/short-sale-position-and-transaction-reporting%2C0.pdf> [<https://perma.cc/RC2R-X55G>] (“The academic literature provides ample theoretical support for, and empirical evidence of, the importance of short selling for liquidity.”); *id.* at 134 (“Theoretical studies support the notion that short sellers promote price efficiency, finding that restrictions on short selling should lead to less accurate prices, higher volatility, and should hinder price discovery.”).

¹¹ See Ekkehart Boehmer & Juan (Julie) Wu, *Short Selling and the Price Discovery Process*, 26 REV. FIN. STUD. 287, 317-18 (2012) (“We find that the total effect of shorting on efficiency is lower when shorting is more constrained.”); Karl B. Diether, Kuan-Hui Lee & Ingrid M. Werner, *It's SHO Time! Short-Sale Price Tests and Market Quality*, 64 J. FIN. 37, 38 (2009) (“[S]horting restrictions had no effect on the volatility of returns.”); Owen A. Lamont & Jeremy C. Stein, *Aggregate Short Interest and Market Valuations*, 94 AM. ECON. REV. 29, 32 (2004) (arguing that problems arise in markets from too little short selling, not too much).

¹² See Joseph E. Engelberg, Adam V. Reed & Matthew C. Ringgenberg, *How Are Shorts Informed? Short Sellers, News, and Information Processing*, 105 J. FIN. ECON. 260, 278 (2012) (arguing negative information is not accurately reflected in stock prices as informed traders capitalize on superior information processing, not superior access to information).

¹³ See Douglas W. Diamond & Robert E. Verrecchia, *Constraints on Short-Selling and Asset Price Adjustment to Private Information*, 18 J. FIN. ECON. 277, 302 (1987) (arguing short sale constraints reduce the “rate at which private information is revealed to the public”); Harrison Hong & Jeremy Stein, *Differences of Opinion, Short-Sales Constraints, and Market Crashes*, 16 REV. FIN. STUD. 487, 491 (2003) (arguing some investors do not trade due to constraints on short selling, preventing accurate information from being revealed to markets); Edward M. Miller, *Risk, Uncertainty, and the Divergence of Opinion*, 32 J. FIN. 1151, 1166 (1977) (“In a market with little or no short selling the demand for a particular security will come from the minority who hold the most optimistic expectations about it.”).

¹⁴ See Nagel, *supra* note 8, at 281-82 (exploring impact of institutional investor ownership of shares on short selling constraints and returns, but not addressing extent of institutional investor short selling or its impact); Melissa Porras Prado, Pedro A. C. Saffi & Jason Sturgess, *Ownership Structure, Limits to Arbitrage, and Stock Returns: Evidence from Equity Lending*

institutional investors and short selling is surprising given how many other topics related to institutional investors have been covered.¹⁵ Among the topics scholars have examined regarding how institutional investors impact the markets are: how hedge funds engage in activist campaigns to achieve corporate reform,¹⁶ how public pension funds divest from certain investments to great public attention,¹⁷ and how sovereign wealth funds attract attention with investments in private and public technology companies.¹⁸ Yet institutional investor short selling remains an understudied topic.

This Article seeks to understand the relationship between institutional investors and short selling. We ask why institutional investors avoid significant amounts of short selling, and we explore whether and how private and regulatory policy might change to embrace short selling by institutional investors. Part I reviews the reasons for the current dearth of institutional investor short selling.

Markets, 29 REV. FIN. STUD. 3211 (2016) (undertaking first study of impact of institutional ownership on short selling).

¹⁵ Short selling has historically been a topic of interest to legal scholars, although the focus has been on issues other than institutional investor participation, such as legal rules restricting shorting generally. *See, e.g.*, Jonathan R. Macey, Mark Mitchell & Jeffrey Netter, *Restrictions on Short Sales: An Analysis of the Uptick Rule and Its Role in View of the October 1987 Stock Market Crash*, 74 CORNELL L. REV. 799, 835 (1989) (discussing uptick rule which restricts short selling); *see also* James W. Christian, Robert Shapiro & John-Paul Whalen, *Naked Short Selling: How Exposed Are Investors?*, 43 HOUS. L. REV. 1033, 1041-44 (2006) (explaining naked short selling and how it differs from traditional short sales); Erik R. Sirri, *Regulatory Politics and Short Selling*, 71 U. PITT. L. REV. 517, 536-38 (2010) (discussing effect of politics on Securities and Exchange Commission's regulation of short selling); David C. Worley, *The Regulation of Short Sales: The Long and the Short of It*, 55 BROOK. L. REV. 1255, 1298-99 (1990) (chronicling how short sales are regulated). Some recent interest arose from the use of short selling by hedge funds seeking to invalidate patents. *See* Feng Ye, Note, *Trading on the Outcomes of Patent Challenges: Short-Selling Petitioners and Possible Modifications to the Inter Partes Review Process*, 98 J. PAT. & TRADEMARK OFF. SOC'Y 557, 558-61 (2016) (highlighting interplay between trading and the patent process).

¹⁶ *See* ACTIVIST INSIGHT, THE ACTIVIST INVESTING ANNUAL REVIEW 2018, at 6 (2018), <https://www.srz.com/images/content/1/5/v2/155375/The-Activist-Investing-Annual-Review-2018-HiRes.pdf> [<https://perma.cc/R3VD-N3HS>] (summarizing recent activist campaigns); Lucian A. Bebchuk, Alon Brav & Wei Jiang, *The Long-Term Effects of Hedge Fund Activism*, 115 COLUM. L. REV. 1085, 1100 (2015) (finding significant growth in hedge fund activism campaigns from 1994 through 2007). Scholars also have begun exploring the extent of short selling by hedge fund activists. *See* Appel, *supra* note 7, at 26 (highlighting emergence of short selling by activist hedge funds).

¹⁷ *See, e.g.*, CAL. PUB. EMPS.' RET. SYS., PUBLIC DIVESTITURE OF THERMAL COAL COMPANIES ACT 3 (2017), <https://www.calpers.ca.gov/docs/forms-publications/public-divestiture-coal-companies-act-2017.pdf> [<https://perma.cc/CJ5H-6Y3L>] (discussing CalPERS's divestment from certain coal companies).

¹⁸ Maureen Farrell, *Larger Tesla Stake by Giant Saudi Fund Faces Hurdles*, WALL STREET J. (Aug. 14, 2018, 5:30 AM), <https://www.wsj.com/articles/larger-tesla-stake-by-giant-saudi-fund-faces-hurdles-1534239000> (discussing prospect of Tesla founder and CEO Elon Musk taking Tesla private with help of Saudi Arabia's sovereign wealth fund).

We identify the regulatory and other barriers that keep key categories of institutions from acquiring significant short positions.

Part II then considers the policy implications that flow from institutional investors' inability and reluctance to take short positions. We show several benefits that likely would result from a system of robust institutional shorting. Institutional shorting could improve capital market efficiency by increasing incentives for negative information to be reflected in securities prices. Shorting also could strengthen discipline of corporate management and better inform directors, thus enhancing economic efficiency.

In addition, institutional shorting could apply pressure to rationalize the problems that continue to plague share lending,¹⁹ while also improving policy outcomes related to voting, dividend taxation, and bankruptcy. Finally, increased institutional shorting could enhance institutions' ability to pursue social goals on behalf of their investors by increasing the financial rewards from furthering these goals.

Although a system of increased institutional shorting could result in significant benefits, it would also introduce new costs and risks that deserve careful consideration before revamping regulatory policy. Accordingly, Part III recommends a measured approach. It shows how institutional investors could become more involved in short selling both directly and indirectly while still complying with current regulatory restrictions. Such modest approaches could generate many benefits without significant risks, and thereby offer an opportunity to test the effects of increased institutional short selling before implementing more sweeping regulatory changes.

Specifically, we explore in Part III how institutional investors could shift their equity-related strategies to strategies that maintain diversified exposure to equity markets by implementing the long/short strategy favored by many hedge funds (either directly within their own portfolios or indirectly with outside managers).²⁰ The notion of combining a slightly leveraged long position with a short position of a size that is comparable to the amount of leverage is not novel. Dozens of mutual funds already follow such strategies, although they generally do not involve the major fund families.²¹ Kynikos Capital, a prominent hedge fund, is 190% long and 90% short, with a primarily passive long position but

¹⁹ See Marcel Kahan & Edward Rock, *The Hanging Chads of Corporate Voting*, 96 GEO. L.J. 1227, 1230-31 (2008) (highlighting problems with current shareholder voting system); Shaun Martin & Frank Partnoy, *Encumbered Shares*, 2005 U. ILL. L. REV. 780, 813 (same).

²⁰ See William Fung & David A. Hsieh, *The Risk in Hedge Fund Strategies: Theory and Evidence from Long/Short Equity Hedge Funds*, 18 J. EMPIRICAL FIN. 547, 547 (2011) (finding that 40% of hedge funds employed some type of long-short strategy).

²¹ See *Long-Short Equity: Total Returns*, MORNINGSTAR, [http://news.morningstar.com/fund-category-returns/long-short-equity/\\$FOCASLO/print.aspx](http://news.morningstar.com/fund-category-returns/long-short-equity/$FOCASLO/print.aspx) [<https://perma.cc/4WCC-Y434>] (last visited Apr. 16, 2019) (displaying returns on several firms' long-short funds). PIMCO is an example of a fund family that has funds employing long-short strategies.

significant focus on its short positions.²² Still, long-short strategies are far from mainstream, and appear to be rare among other types of institutional investors. We recognize that, at some point, the amount of shorting by institutions might become too large, creating downward informational biases in place of positive ones, but the literature suggests that the markets are far from that crossover point.

We do not view short selling as a mainstream investment strategy for all institutional investors; we recognize that not all investors can or wish to have direct involvement. We therefore also explore how institutional investors could engage in short selling indirectly. They could improve markets overall, and their own returns, by tolerating a greater amount of short selling among the external managers they entrust with institutional funds.

In advocating that institutional investors embrace short selling, this Article suggests that short selling might be viewed in the same way public law scholars view some free speech actors: outlier participants in society who do not represent the views of the majority and who seek changes that would harm certain powerful institutions and individuals, but whose efforts and positions nevertheless can effect changes that significantly benefit society overall.

I. WHY DON'T INSTITUTIONAL INVESTORS SHORT?

We begin by reviewing reasons why institutional investors do not engage significantly in short selling. First, a word on terminology. By “institutional investors,” we refer to significant entities that hold and invest funds ultimately owned by others.²³ Categories of institutional investors include mutual funds, insurance companies, pension funds, banks, sovereign wealth funds, endowments, foundations, and hedge funds. Of these categories, only a subset of hedge funds has engaged in short selling to a significant degree.

²² See Michelle Celarier, *How Jim Chanos Uses Cynicism, Chutzpah – and a Secret Twitter Account – to Take on Markets (and Elon Musk)*, INSTITUTIONAL INVESTOR (Sept. 17, 2018), <https://www.institutionalinvestor.com/article/b1b00ynrgtn05r/How-Jim-Chanos-Uses-Cynicism-Chutzpah-and-a-Secret-Twitter-Account-to-Take-on-Markets-and-Elon-Musk> [<https://perma.cc/7W22-GVVV>].

²³ See, e.g., Sarah C. Haan, *Shareholder Proposal Settlements and the Private Ordering of Public Elections*, 126 YALE L.J. 262, 280 n.68 (2016) (contrasting institutional investors with “retail, mom-and-pop investors”); Fiona Scott Morton & Herbert Hovenkamp, *Horizontal Shareholding and Antitrust Policy*, 127 YALE L.J. 2026, 2029 (2018) (using “institutional investors” to mean any “entit[y] that manage[s] stock market investing on behalf of final owners”); *Form 13F—Reports Filed by Institutional Investment Managers*, U.S. SEC. & EXCH. COMM’N, <https://www.sec.gov/fast-answers/answers-form13f.htm> [<https://perma.cc/TLR5-2LAH>] (last modified Feb. 9, 2019) (defining institutional investors as “(1) an entity that invests in, or buys and sells, securities for its own account; or (2) a natural person or an entity that exercises investment discretion over the account of any other natural person or entity”).

Institutional investors represent an enormous amount of economic activity. For example, mutual funds manage approximately \$27 trillion.²⁴ Pension funds control approximately \$20 trillion in assets, according to the Organisation for Economic Co-Operation and Development, with insurance companies adding another \$9 trillion.²⁵ Sovereign wealth funds invest roughly \$10-\$15 trillion on a global basis.²⁶ Hedge fund assets are estimated at \$3 trillion.²⁷ Another \$1 trillion or so comes from endowments and foundations.²⁸ Collectively, these holdings comprise well over half the value of the U.S. stock market.²⁹

Institutional investors' rise to prominence in the capital markets is a relatively recent phenomenon. Hedge funds, for example, were small players leading into the 1990s; their assets under management grew by a multiple of six between 2000 and today.³⁰ Mutual funds' assets under management increased thirty-five times between the late 1980s and today, largely driven by the rise in index funds and exchange-traded funds.³¹ The percentage of the overall U.S. stock market

²⁴ INV. CO. INST., 2017 ANNUAL REPORT TO MEMBERS 2 (2017), https://www.ici.org/pdf/17_ici_annual.pdf [<https://perma.cc/2TSC-4TUD>] (finding investment company assets total \$26.7 trillion).

²⁵ ORG. FOR ECON. CO-OPERATION AND DEV., OECD INSTITUTIONAL INVESTORS STATISTICS 2009-2016, at 170 (2017), https://read.oecd-ilibrary.org/finance-and-investment/oecd-institutional-investors-statistics-2017_instinv-2017-en#page1 [<https://perma.cc/BA2F-V2ZH>] (detailing assets held by pension funds and insurance companies).

²⁶ STEFANO CURTO, THE WORLD BANK, ECONOMIC PREMISE: SOVEREIGN WEALTH FUNDS IN THE NEXT DECADE 1 (Apr. 2010), <http://documents.worldbank.org/curated/en/886451468341078325/pdf/539150BRI0EP80Box345633B01PUBLIC1.pdf> [<https://perma.cc/S6MR-DT22>] (citing reports that estimated sovereign wealth fund assets at \$13.4 trillion to \$17.5 trillion); *Sovereign Wealth Fund Rankings*, SOVEREIGN WEALTH FUND INST., <https://www.swfinstitute.org/sovereign-wealth-fund-rankings/> [<https://perma.cc/BP5Y-A8RR>] (last visited Apr. 16, 2019) (estimating \$8 trillion in assets).

²⁷ Melissa Karsh, *Hedge Fund Assets Pass \$3 Trillion in 2016 for First Time: Chart*, BLOOMBERG (Jan. 23, 2017, 5:00 AM), <https://www.bloomberg.com/news/articles/2017-01-23/hedge-fund-assets-pass-3-trillion-in-2016-for-first-time-chart>.

²⁸ Keith C. Brown, Lorenzo Garlappi & Christian Tiu, *The Troves of Academe: Asset Allocation, Risk Budgeting and the Investment Performance of University Endowment Funds* 1 (McCombs Research Paper Series No. FIN-03-07, 2007), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=981436 (estimating endowment and foundations controlled \$1.3 trillion in 2005). College and university endowments alone comprise over \$500 million. *Fast Facts*, NAT'L CTR. FOR EDUC. STAT., <https://nces.ed.gov/fastfacts/display.asp?id=73> [<https://perma.cc/c8B6A-LQT9>] (last visited Apr. 16, 2019).

²⁹ See, e.g., Christopher Geczy et al., *Institutional Investing When Shareholders Are Not Supreme*, 5 HARV. BUS. L. REV. 73, 79 (2015) (“[I]nstitutional investors own, on average, more than 50% of all public firms in the U.S.”); Morton & Hovenkamp, *supra* note 23, at 2029 (“Institutional investors today own roughly 70% of the U.S. stock market.”).

³⁰ Registration Under the Advisors Act of Certain Hedge Fund Advisers, 69 Fed. Reg. 72,054, 72,064 (Dec. 10, 2004) (quoting study that estimated hedge fund assets under management at \$450 billion in 1999).

³¹ INV. CO. INST., 2010 INVESTMENT COMPANY FACT BOOK, at x (2010), https://www.ici.org/pdf/2010_factbook.pdf [<https://perma.cc/3TF3-BPB6>] (listing \$769 billion in assets under

held by institutional investors overall has similarly increased, from approximately 5% in 1945, to 34% in 1980, to 67% in 2010.³²

With institutional investors' rise has come a dramatic increase in their power. Although institutional investors control assets ultimately owned by a diffuse and diverse ownership base, each institutional investor typically votes its shares in a single block, on behalf of a hypothetical individual owner.³³ This approach to voting, combined with large holdings, gives institutional investors tremendous clout.³⁴ Institutional investors regularly voice their concerns—and exert influence—over matters ranging from composition of boards of directors to say on pay and social responsibility.³⁵

Short selling is notably absent from most institutional investors' repertoire. The reasons for this absence are varied, and we consider them below. Before doing so, we reiterate that a significant subset of one category of institutional investors—hedge funds—does engage in regular shorting activity. We develop the reasons for, and ramifications of, this important swath of institutional behavior in detail in a separate article.³⁶ We now turn to considering specific categories of institutional investors and their lack of appetite for shorting.

management in 1987); INV. CO. INST., *supra* note 24, at 2 (listing \$27 trillion in assets under management today).

³² Marshall E. Blume & Donald B. Keim, Institutional Investors and Stock Market Liquidity: Trends and Relationships 4-5 (Sept. 18, 2012) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2147757 (examining trends in stock ownership).

³³ See, e.g., Daniel J.H. Greenwood, *Fictional Shareholders: For Whom Are Corporate Managers Trustees, Revisited*, 69 S. CAL. L. REV. 1021, 1066-67 (1996) (stating that “key point about institutional investors is that they invest on behalf of the interest of their own fictional corporate law shareholders”).

³⁴ This is particularly true when institutional investors' interests align on a particular issue. See, e.g., Jan Fichtner, Eelke M. Heemskerck & Javier Garcia-Bernardo, *Hidden Power of the Big Three? Passive Index Funds, Re-Concentration of Corporate Ownership, and New Financial Risk*, 19 BUS. & POL. 298, 316-19 (2017) (analyzing coordination among BlackRock, Fidelity, and Vanguard passive funds).

³⁵ See, e.g., INSTITUTIONAL S³HOLDER SERVS., U.S. POLICY – DIRECTOR ELECTIONS – BOARD GENDER DIVERSITY, <https://www.issgovernance.com/file/policy/2018/DirectorElections-BoardGenderDiversity-US.pdf> [<https://perma.cc/T77R-G443>] (last visited Apr. 16, 2019) (proposing comments for advising institutional investors on board of directors gender composition); Stephen Choi, Jill Fisch & Marcel Kahan, *Who Calls the Shots? How Mutual Funds Vote on Director Elections*, 3 HARV. BUS. L. REV. 35, 36-38 (2013) (examining mutual funds role in management elections); J. Alexander Dyck et al., *Do Institutional Investors Drive Corporate Social Responsibility? International Evidence*, J. FIN. ECON. (forthcoming 2019) (manuscript at 5), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2708589 (examining institutional investors role in social responsibility); Paul H. Edelman et al., *Shareholder Voting in an Age of Intermediary Capitalism*, 87 S. CAL. L. REV. 1359, 1426-33 (2014) (analyzing institutional voting on say on pay provisions). See generally Luca Enriques & Alessandro Romano, *Institutional Investor Voting Behavior: A Network Theory Perspective*, 2019 U. ILL. L. REV. (forthcoming) (analyzing how and why institutional investors invest in voting despite financial incentives to the contrary).

³⁶ See Barbara A. Bliss, Peter Molk & Frank Partnoy, *Negative Activism*, 99 WASH. U. L. REV. (forthcoming 2020), <https://ssrn.com/abstract=3341567>.

A. Mutual Funds

The reasons for mutual funds' lack of short selling are predominantly historic and regulatory. Modern regulation continues to restrict, but not eliminate, mutual funds' ability to take short positions. Although some historic regulatory barriers have been removed, mutual funds have been slow to increase their short selling given previous restrictions.

Historically, tax policy has been one of the main impediments to mutual fund short selling. Until 1997, the "short-short" rule caused mutual funds to lose favorable pass-through tax treatment if more than 30% of their capital gains came from short-term investments.³⁷ Under this rule, just under one third of mutual funds' gains could come from short selling³⁸ or other short term investments, unless mutual funds were willing to forfeit a significant competitive tax advantage.

Although the "short-short" rule is no longer in effect, the tax treatment of mutual fund short selling remains unfavorable. All gains from short positions are taxed at relatively high short-term capital gains rates.³⁹ Funds that strive for tax efficiency are thus dissuaded from short selling. Moreover, the expected pre-tax gains on short positions must be comparatively greater than those of long-term long positions, which have the potential for lower long-term capital gains tax rates.

In addition to tax, another regulatory obstacle to short selling is the Investment Company Act of 1940's restriction on mutual fund leverage.⁴⁰ Since shorting involves borrowing shares the shorter does not own, it falls within the Act's requirement that shorters hold 300% of the shorted amount in a separate account, to act as security against losses.⁴¹ The restriction gives rise to the commonly held wisdom that mutual funds cannot short more than a quarter of their market value.⁴² In reality, the restriction is far more modest. The Securities

³⁷ See, e.g., Bill Barnhart, *Short-Sort Rule Repeal: The Long and the Short Of It*, CHI. TRIB., Aug. 17, 1997, at C3.

³⁸ The tax treatment of short sale gains is short-term income regardless of the length of time that the mutual fund held the position, unless the mutual fund also held the underlying shorted shares for a significant length of time. *Publication 550 (2017), Investment Income and Expenses*, IRS, <https://www.irs.gov/publications/p550> [<https://perma.cc/7G8F-J5UL>] (last visited Apr. 16, 2019) ("As a general rule, you determine whether you have short-term or long-term capital gain or loss on a short sale by the amount of time you actually hold the property eventually delivered to the lender to close the short sale.").

³⁹ See *supra* note 38.

⁴⁰ Investment Company Act of 1940, 15 U.S.C. § 80a-3 (2012).

⁴¹ *Id.* § 80a-2 (prohibiting registered investment companies from shorting); *id.* § 80a-18 (rules for open-end funds); *id.* § 80b-2 (close-end funds).

⁴² See, e.g., INV. CO. INST., COMPREHENSIVE REGULATORY REGIME FOR U.S. MUTUAL FUNDS, https://www.ici.org/pdf/14_ici_usfunds_regulation.pdf [<https://perma.cc/HCW8-MY4A>] (last visited Apr. 16, 2019) (noting that the Act "strictly limit[s] mutual funds' ability to take on leverage" and pointing to the requirement of "asset coverage of at least 300 percent for all [shorting]").

and Exchange Commission (“SEC”) has indicated that the Act’s 300% coverage requirement will be satisfied as long as mutual funds hold, in a separate account, liquid securities or other high-quality assets equal to the market value of any shorted shares, amounting to only an effective 100% coverage requirement.⁴³ Moreover, mutual fund investments in leveraged assets (as contrasted with mutual funds leveraging investments themselves) do not fall within the Act’s restrictions; investing in various derivative investments have therefore allowed mutual funds to achieve leverage reportedly up to ten to one ratios while still complying with the Act’s requirements.⁴⁴ Therefore, as with tax policy changes, modern formal regulatory constraints impose few obstacles to mutual fund shorting.

Mutual funds also avoid short selling for non-regulatory reasons, including as a response to real and perceived principal-agent costs.⁴⁵ Some have argued that mutual fund managers’ compensation arrangements can push them to undertake excessively risky investments relative to the level of risk desired by the underlying owners.⁴⁶ Funds undertake a variety of responses to this problem, one of which is to impose blanket limitations through their governance documents, which restrict managers’ authority to engage in certain potentially risky types of transactions.⁴⁷ Since shorting securities without holding the underlying asset (or an asset highly correlated with the underlying asset)

⁴³ 15 U.S.C. § 80a-2 (prohibiting registered investment companies from shorting); *id.* § 80a-18 (allowing investment companies to use leverage, including shorting, if certain requirements are satisfied); Merrill Lynch Asset Management, SEC No-Action Letter, File No. 801-11583 (July 2, 1996) (stating that “issue of compliance with Section 18 would not be raised if a fund covers its obligations . . . by maintaining a segregated account on the books . . . containing assets equal in value to those obligations”). These are rules for open-end mutual funds—rules for close-end funds are similar. 15 U.S.C. § 80b-2 (imposing nominal coverage requirements of 200% to 300%, depending on the nature of the senior security).

⁴⁴ *See, e.g.*, Kara M. Stein, Comm’r, Sec. & Exch. Comm., Speech at the Brookings Institute in Washington D.C.: Mutual Funds – The Next 75 Years (June 15, 2015), <https://www.sec.gov/news/speech/mutual-funds-the-next-75-years-stein.html> [<https://perma.cc/9NHM-XKQ4>] (recounting reports of funds achieving effective 10x leverage through using swaps and futures contracts).

⁴⁵ *See* Leo E. Strine, Jr., *Why Excessive Risk-Taking Is Not Unexpected*, N.Y. TIMES: DEALBOOK (Oct. 5, 2009, 1:30 PM), <http://dealbook.nytimes.com/2009/10/05/dealbook-dialogue-leo-strine/> (using phrase “separation of ‘ownership from ownership’” to describe institutional investor conflicts).

⁴⁶ *See, e.g.*, Andres Almazan et al., *Why Constrain Your Mutual Fund Manager?*, 73 J. FIN. ECON. 289, 300 (2004) (discussing how compensation arrangements may influence risk-taking behavior). Such excessive risk-taking is particularly exacerbated when managers’ compensation packages partially or fully insulate them from fund underperformance. This will be true for a variety of management payment structures. *See generally id.* (summarizing research related to tailoring management compensation contracts to align manager and investor incentives and mitigate this risky portfolio problem).

⁴⁷ *See id.* at 295-97 (studying funds’ adoption of six investment constraints as means of aligning manager and investor incentives).

represents a risk-enhancing leveraged transaction with potentially limitless losses, many funds have adopted shorting constraints.⁴⁸

As with regulatory and historic reasons, though, this kind of internal constraint has also apparently moderated over time. In 1994, 73% of funds filing SEC Form N-SAR (a form that registered investment companies must file semi-annually) had adopted internal policies restricting short sales.⁴⁹ Today, the ratio has flipped, with the majority of funds (64%) permitting short sales, perhaps in response to more tightly aligning manager-investor incentives in other ways.⁵⁰

Regulatory and private ordering constraints on mutual fund short selling have therefore markedly diminished. Despite the ability to engage in shorting, though, mutual funds' actual use of short selling still remains surprisingly low. In 2014, for example, only 5.25% of funds engaged in short selling of any sort, despite 64% of funds' governance documents authorizing short sales.⁵¹ The positions were also often relatively modest, ranging from 8% to a maximum of 20% of those funds' net asset value.⁵²

Accordingly, mutual funds' current lack of short selling presents something of a puzzle. There are currently few formal barriers to short selling by mutual funds, and some evidence suggests that short selling generates significant abnormal returns for those mutual funds that engage in it.⁵³ Yet the amount of short selling by mutual funds remains relatively low.

B. Insurance Companies

The story of insurance companies and short selling is straightforward: state law regulating insurer solvency generally prohibits insurance companies from engaging in short selling. This state law prohibition arises from the model regulation promulgated by the influential National Association of Insurance Commissioners ("NAIC"), which prohibits short sales by an insurance company unless it owns the underlying security or the unrestricted right to buy that

⁴⁸ *Id.* at 295 (noting that nearly 70% of funds constrain short selling over seven year sample period).

⁴⁹ *Id.* (noting "73.3% of the 679 funds" formally restricted short selling). To the extent that *all* short sales are restricted, however, these constraints may be overly broad, as they rule out risk-reducing covered shorting.

⁵⁰ DANIEL DELI ET AL., DIV. OF ECON. & RISK ANALYSIS, SEC. & EXCH. COMM'N, USE OF DERIVATIVES BY REGISTERED INVESTMENT COMPANIES 22 (2015), <https://www.sec.gov/files/derivatives12-2015.pdf> [<https://perma.cc/2M7T-WVD6>] (detailing investment practices in which funds are permitted to, and actually, engage).

⁵¹ *Id.* (showing disparity between funds permitted to short and funds actually shorting). Early studies found that even fewer mutual funds were short sellers, in the range of 3%, suggesting a modest increase in recent years. See Almazan et al., *supra* note 46, at 300.

⁵² DELI ET AL., *supra* note 50, at 12. Short positions average approximately 16% of fund assets among funds that choose to short.

⁵³ Engelberg, Reed & Ringgenberg, *supra* note 10, at 762-65 (finding funds that short earn abnormal returns of 1.6% per year relative to their benchmarks, and 4.1% per year based on their short positions).

security within six months.⁵⁴ For a variety of reasons, individual states generally follow the NAIC prohibition.⁵⁵

The NAIC prohibition is part of a conservative regulatory regime that emphasizes the safety of investments and is focused on ensuring insurance company solvency. This regulatory regime has been criticized in the fixed income setting for its undue reliance on credit ratings, and for indirectly (and perhaps inadvertently) permitting the use of fixed instruments such as structured notes to invest indirectly in equities.⁵⁶ Yet notwithstanding NAIC difficulties in the fixed income markets, the NAIC regulations generally have strictly limited the amounts that insurance companies can invest directly in equities, and by extension their ability to short. For example, the NAIC model solvency rules limit equity investment to 20% of a life insurer's assets and 25% of insurer assets in other lines;⁵⁷ states generally follow suit.⁵⁸

In the aftermath of the financial crisis, it became apparent that some insurance companies, particularly AIG, had been using derivatives for various purposes. However, a recent NAIC study shows that insurance companies use derivatives only to a very limited extent, primarily to hedge risk rather than to obtain synthetic short equity exposure.⁵⁹ Indeed, as of 2017, it appeared that only 5% of all active insurance companies had any derivatives exposure at all,⁶⁰ and this exposure overwhelmingly was used to hedge investments (94% of derivative exposure was devoted to hedging, with income generation use well under 1%).⁶¹

In sum, insurance companies generally are not active short sellers. Short selling by insurance companies is used almost exclusively to hedge positions, and generally is not used with respect to equity positions at all.

⁵⁴ INVESTMENTS OF INSURERS MODEL ACT §§ 13(D), 26(D) (NAT'L ASS'N OF INS. COMM'RS 2015).

⁵⁵ See, e.g., N.Y. INS. LAW § 1410(a)(2), (d) (McKinney 2019) (allowing insurance companies to engage in hedging, or income generation only if the insurer writes certain call options—the opposite position of a short). See generally Daniel Schwarcz, *Is U.S. Insurance Regulation Unconstitutional?*, 25 U. CONN. INS. L. REV. (forthcoming 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3239966 (analyzing persuasive power of NAIC solvency regulation standards).

⁵⁶ See, e.g., FRANK PARTNOY, *INFECTIOUS GREED: HOW DECEIT AND RISK CORRUPTED THE FINANCIAL MARKETS* (2009).

⁵⁷ INVESTMENTS OF INSURERS MODEL ACT §§ 13(B), 26(B) (NAT'L ASS'N OF INS. COMM'RS 2015).

⁵⁸ See, e.g., Alan R. Palmiter, *Staying Public: Institutional Investors in U.S. Capital Markets*, 3 BROOK. J. CORP. FIN. & COM. L. 245, 274 (2009) (reporting life insurer equity caps of 25% in Texas, 20% in Illinois, and 20% in New York).

⁵⁹ Nat'l Ass'n of Ins. Comm'rs & Ctr. for Ins. Policy & Research, *Capital Markets Special Report: Update on the Insurance Industry's Use of Derivatives and Exposure Trends*, NAIC, https://www.naic.org/capital_markets_archive/170323.htm [<https://perma.cc/8R9B-A9XJ>] (last visited Apr. 16, 2019).

⁶⁰ *Id.* tbl.1.

⁶¹ *Id.* tbl.7.

C. Pension Plans

The extent to which pension funds engage in short selling is unclear. Although there are some regulatory and private restrictions on pension fund short selling, these restrictions are relatively modest. Pension plans are generally divided into public plans (affiliated with government employers and employees) and private plans (for private employers and employees), with regulations differing accordingly. Pension funds also are divided between defined contribution and defined benefit plans, with the latter diminishing in importance over time, but still constituting a significant area of institutional investing.

Historically, defined benefit public pension plans (with the exception of federal public pension plans, which constitute a relatively small portion of all public pension plans)⁶² have faced state law restrictions on their investment activities. These restrictions were designed to limit pension plans' risk of loss and were quite burdensome, effectively pushing pension plans into fixed income investments and cash.⁶³ In 1952, for example, 96% of public pension plan assets were invested in fixed income investments and cash.⁶⁴ States began to liberalize their approaches beginning in the 1980s, giving pension plans the flexibility to pursue other investment types. By 2012, assets in fixed income investments and cash had decreased to a still-sizable 27%, with countervailing increases in other investment types.⁶⁵

Today, some states' public pension plan regulations allow pension funds wide latitude in their investment choices, subject to various prudent investor standards. California, for example, gives its public pension funds the discretion to invest in any asset whatsoever, directing them merely to "diversify the investments . . . to minimize the risk of loss and to maximize the rate of return" subject to duties of care, skill, prudence, and diligence of a prudent investor.⁶⁶ These charges seemingly allow for short selling. Other states like Georgia prohibit their pension plans from significant investments in "alternative investments," such as commodities, low-grade debt, or hedge funds.⁶⁷

⁶² See, e.g., Palmiter, *supra* note 58, at 266.

⁶³ See, e.g., PEW CHARITABLE TRS., STATE PUBLIC PENSION INVESTMENTS SHIFT OVER PAST 30 YEARS 2 (2014), http://www.pewtrusts.org/-/media/assets/2014/06/state_public_pension_investments_shift_over_past_30_years.pdf [<https://perma.cc/8VXN-GULY>].

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ CAL. CONST. art. 16, § 17(c), (d).

⁶⁷ Until 2012, Georgia public pensions were prohibited from investing any assets in these alternative investments; today its public pensions can invest up to 5% of assets in these investments. See, e.g., Public Retirement Systems Investment Authority Law, GA. CODE ANN. §§ 47-20-80 to 47-20-87 (2018); Russell Grantham, *Change in Georgia's Pension Law Not Raising Capital Like Intended*, ATLANTA J. CONST. (Dec. 30, 2012), <https://www.ajc.com/news/change-georgia-pension-law-not-raising-capital-like-intended/OM9a7ULFpcX1dCP1OqGN8K/> [<https://perma.cc/G48F-HX65>]. Georgia's largest pension plan was excluded from this law, keeping it unable to invest in these alternative investments.

Public pension plans have shown an appetite for nontraditional investment types, including shorting, when they have been allowed to do so. Approximately 25% of public pension plan assets are invested in alternative investments such as private equity, hedge funds, real estate, and commodities, apparently driven by these plans' attempts to cover future funding commitments.⁶⁸ But it is unclear how much, if any, of this allocation is involved in short selling specifically.⁶⁹

Unlike public pension plans, defined benefit private pension plans are regulated under the federal Employee Retirement Income Security Act ("ERISA") regime. These regulations do not on their face prohibit short selling. Plan managers are required to invest with the care and skill of a prudent investor.⁷⁰ This standard implicates similar standards under private trusts, summarized in the Uniform Prudent Investor Act ("UPIA") and the *Third Restatement of Trusts*.⁷¹ The UPIA, adopted in forty-four states,⁷² does not expressly prohibit the use of shorts or any other type of investment. Indeed, it notes that "[a]ll categoric restrictions on types of investment have been abrogated"⁷³ and that "[a] trustee may invest in any kind of property or type of investment consistent with the standards" of the Act.⁷⁴ Similarly, the *Third Restatement of Trusts* contemplates that trustees may seek "higher risk in quest of greater return" and notes that no single type of investment is categorically impermissible.⁷⁵ Nor does caselaw appear to provide a clear deterrent, absent a provision in the plan documents prohibiting such an investment.⁷⁶

Yet despite this apparently permissive standard, private pension plans invest little outside of traditional investments. A sample drawn from Fortune 1000 companies shows a relatively steady 15% of fund assets invested outside of

⁶⁸ PEW CHARITABLE TRS., *supra* note 63, at 7.

⁶⁹ Once private equity and real estate are removed, a study of the largest sixteen public pension plans showed investment of only 5% of their assets in "other" types of alternative investments, which seemingly includes any short investments. ELLIOT HENTOW, ALEXANDER PETROV & SEJAL ODEDRA, STATE ST. GLOB. ADVISORS, HOW DO PUBLIC PENSION FUNDS INVEST? 5 (2018), <https://www.ssga.com/investment-topics/asset-allocation/2018/inst-how-do-pfds-invest.pdf> [<https://perma.cc/3Y99-LZAR>].

⁷⁰ 29 U.S.C. §§ 1001-1191c, 1201-1242, 1302-1461 (2012).

⁷¹ UNIF. PRUDENT INV. ACT (AM. BAR ASS'N 1995); RESTATEMENT (THIRD) OF TRUSTS (AM. LAW INST. 2003); *see, e.g.*, *Firestone Tire & Rubber Co. v. Bruch*, 489 U.S. 101, 110-11 (1989) ("ERISA's legislative history confirms that [ERISA's] fiduciary responsibility provisions codif[y] and mak[e] applicable to [ERISA] fiduciaries certain principles developed in the evolution of the law of trusts.").

⁷² *Prudent Investor Act*, UNIFORM L. COMMISSION, <https://www.uniformlaws.org/committees/community-home?communitykey=58f87d0a-3617-4635-a2af-9a4d02d119c9&tab=groupdetails> [<https://perma.cc/SZN6-UYSB>] (last visited Apr. 16, 2019).

⁷³ UNIF. PRUDENT INV. ACT prefatory note at 1 (AM. BAR ASS'N 1995).

⁷⁴ *Id.* § 2(e).

⁷⁵ RESTATEMENT (THIRD) OF TRUSTS §§ 227 cmt. f(2), 228 cmt. e (1992).

⁷⁶ *See, e.g.*, Robert J. Aalberts & Percy S. Poon, *Derivatives and the Modern Prudent Investor Rule: Too Risky or Too Necessary?*, 67 OHIO ST. L.J. 525, 536-45 (2006) (summarizing caselaw and commentary on trustee use of derivatives).

standard classes of cash, debt, or equity from 2009 through 2016.⁷⁷ Only 6-8% of assets were invested in hedge funds and “other” assets that could conceivably involve short selling activity; the remainder was invested in private equity and real estate.⁷⁸

Notwithstanding these limitations, private pension plans do appear to have an appetite for using derivatives, some portion of which might be devoted to shorting or its equivalent. In a survey of pension fund chief investment officers, only 22% of respondents indicated they had no plans to use derivatives.⁷⁹ Seventy-one percent said they currently use derivatives, with another 7% planning to do so.⁸⁰ This appetite for using derivatives suggests that some pension funds might be open to increased short selling of equities, although it seems doubtful that chief investment officers would use short selling as a free-standing investment strategy, given its risk.

Pension funds have exhibited herding behavior in various ways, moving in and out of different asset classes in groups.⁸¹ To the extent they systemically switch among classes of investment, they might exhibit similar herding behavior with respect to short selling. The fact that pension funds generally are not short sellers today does not mean they will not become short sellers tomorrow.

D. Banks

Like insurance companies and pension funds, banks do not engage in significant amounts of equity short selling. Indeed, federally insured banks cannot invest their general assets in stocks, in either long or short positions.⁸² They can, however, invest assets for which they act as trustees in securities, allowing for some equity involvement. As with pension plans, bank trustees are

⁷⁷ Mercedes Aguirre & Brendan McFarland, Willis Towers Watson, *2016 Asset Allocations in Fortune 1000 Pension Plans*, INSIDER, Jan. 2018, at 1, 7, <https://www.towerswatson.com/en/Insights/Newsletters/Americas/Insider/2018/01/2016-asset-allocations-in-fortune-1000-pension-plans> [<https://perma.cc/9UPC-9KXX>] (finding stable percentage investment outside of cash, debt, and equity for Fortune 1000 companies).

⁷⁸ *Id.* (showing hedge fund and other investment between 6.5% and 8.3% from 2009 to 2016).

⁷⁹ *2016 Liability Driven Investment Survey*, CHIEF INVESTMENT OFFICER (Nov. 16, 2016, 11:02 PM), <https://www.ai-cio.com/surveys/2016-liability-driven-investment-survey>.

⁸⁰ *Id.*

⁸¹ See David Blake, Lucio Sarno & Gabriele Zinna, *The Market for Lemmings: The Herding Behavior of Pension Funds* (Pensions Inst., Discussion Paper No. PI-1408, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2567381 (“[P]ension funds do indeed behave like lemmings as they herd strongly both in asset classes and in clearly defined subgroups.”).

⁸² 12 U.S.C. § 24 (2012) (limiting class of securities federally insured banks may invest in); 12 C.F.R. § 362.3 (2018) (prohibiting class of equity investments for insured state banks, including long and short positions); *id.* § 362.11 (prohibiting class of equity investments for insured state savings associations, including long and short positions).

not expressly prohibited from shorting as trustees as a matter of course and instead are subject to prudent investor standards.⁸³

As with private pension plans, bank trust administrators face no clear mandate against shorting.⁸⁴ Trust administrators, however, have a history of adopting conservative investment strategies. Although shorting can be used to reduce risk when matched with similar long positions, using short selling as an income-generation tool is not consistent with the overall conservative investment tradition.

Outside of their trustee roles, banks, whether insured or not, also face new liquidity coverage rules that require banks to hold liquid assets at least equal to their projected net cash outflows over a thirty-day period.⁸⁵ Only “high-quality liquid assets”—basically Treasury notes and cash—count towards liquid assets.⁸⁶ Banks are therefore further restricted from shorting: only the amount that exceeds this threshold could conceivably be invested in short positions.

Historically, investment banks have used short selling as part of various underwriting strategies, including stabilization efforts related to initial public offerings. However, that activity is limited to particular events. Investment bank proprietary trading likely involved short selling, but that category of trading has declined since the financial crisis. Although bank affiliates might invest more broadly, overall banks themselves invest very little of their portfolios in long equities positions, and generally are not involved in the short selling of equities for their own portfolios.⁸⁷ Significant regulatory and cultural changes would be required to alter this practice.

E. *Sovereign Wealth Funds*

Sovereign wealth funds are estimated to have roughly fifteen trillion dollars in institutional investment.⁸⁸ Because of their private nature, it is difficult to get an accurate sense for how these funds invest. Despite this difficulty, some anecdotal data are available.

Some experts claim that most sovereign wealth funds are “generally passive and long-term investors with no desire to impact company decisions by actively

⁸³ See *supra* notes 72-76 and accompanying text (discussing trustee use of derivatives). Of course, individual trusts are able to limit shorting through their governing documents.

⁸⁴ This assumes, of course, that the trust instrument has not prohibited their use. See, e.g., *Laborers Nat'l Pension Fund v. N. Tr. Quantitative Advisors, Inc.*, 173 F.3d 313, 321-23 (5th Cir. 1999) (holding trustee liable for violating trust requirements that prohibited short sales, among other strategies).

⁸⁵ 12 C.F.R. § 249.10 (establishing minimum liquidity coverage ratio requirement and mandating minimum liquidity for banks).

⁸⁶ *Id.* § 249.20 (requiring high-quality liquid assets to meet liquidity requirement).

⁸⁷ See, e.g., Palmitter, *supra* note 58, at 277-78 (finding, before passage of new liquidity coverage ratio rules, commercial banks invested 0.4% of their assets in equities, savings associations invested 1.4%, and broker-dealers invested 7.3%).

⁸⁸ See, e.g., CURTO, *supra* note 26, at 1 (estimating sovereign wealth funds assets total between \$13.4 and \$17.5 trillion).

using their voting rights.”⁸⁹ However, some evidence suggests that these funds are now taking on greater risks. For example, the Saudi Arabia’s Public Investment Fund invested forty-five billion dollars in the SoftBank Vision Fund;⁹⁰ this fund was dedicated to taking risk in the technology sector, but the positions have been long positions in private companies, not short positions.

Although systematic information about sovereign wealth funds generally is not available, Norway’s transparent sovereign wealth fund provides perhaps the most comprehensive examination into a sovereign wealth fund’s holdings. Norway’s fund is currently the largest sovereign wealth fund in the world, managing just over one trillion dollars.⁹¹ It invests mainly in publicly traded equity, fixed income securities, and a 2.7% holding of unlisted real estate.⁹² The Norwegian government provides the fund with a 70% equity/30% fixed income target allocation, with the equity and fixed income portions individually benchmarked to global indexes.⁹³ The fund also faces tracking error limitations, with the expectation that it will be within 1.25 percentage points of benchmark indices in at least two out of three years.⁹⁴

Although the government does not expressly limit shorting by the fund, and the fund does not appear to have explicit limits on short selling, some of the investment restrictions suggest that short selling is either limited or non-existent. For example, the fund guidelines state that a maximum of 5% of the equity and fixed-income investments can be leveraged; in fact the fund reports that only 1% is leveraged.⁹⁵ Moreover, a maximum of 5% of the fund’s value can be represented by borrowed securities; the fund reports only 1.4%.⁹⁶ Finally, a maximum of 1.5% of the fund can be invested in any single company (which limits the potential returns from shorting that we discuss later); the fund reports a maximum investment of only 1%.⁹⁷

⁸⁹ INT’L MONETARY FUND, SOVEREIGN WEALTH FUNDS—A WORK AGENDA 9 (2008), <https://www.imf.org/en/Publications/Policy-Papers/Issues/2016/12/31/Sovereign-Wealth-Funds-A-Work-Agenda-PP4234> [<https://perma.cc/XC6Z-RKA2>].

⁹⁰ Farrell, *supra* note 18.

⁹¹ *Sovereign Wealth Fund Rankings*, *supra* note 26 (showing Norway’s sovereign wealth fund manages \$1,074,600,000).

⁹² NORGES BANK INV. MGMT., GOVERNMENT GLOBAL PENSION FUNDS: QUARTERLY REPORT Q3 2018, at 4 (2018), <https://www.nbim.no/contentassets/6ca8926d402d484b85569addb7697992/gpfg-3q-2018-quarterly-report.pdf> [<https://perma.cc/Z6EV-6GEL>] (detailing investment strategy of fund).

⁹³ *Year-to-Date*, NORGES BANK INV. MGMT. (Aug. 21, 2018), [<https://perma.cc/7X5M-3C46>] (detailing benchmark strategy).

⁹⁴ *Risk Management*, NORGES BANK INV. MGMT., <https://www.nbim.no/en/investments/investment-risk/> [<https://perma.cc/6ZC5-KMW7>] (last visited Apr. 16, 2019) (“The expected tracking error limit is 125 basis points, or 1.25 percentage point.”).

⁹⁵ *Id.* (limiting leveraged investments to 5%).

⁹⁶ *Id.* (limiting borrowing to 5% of the fund).

⁹⁷ *Id.* (limiting investment in one company to 1.5% of fund).

The fund is subject to government-imposed ethical exclusions, with which it appears to comply by not purchasing shares of certain companies, instead of employing short selling. For example, the fund is prohibited from investing in tobacco or certain weapons manufacturers, companies with a risk of violating “fundamental ethical norms,” companies whose activities lead to greenhouse gas emissions, and mining or power companies with high involvement in the coal industry.⁹⁸ According to one estimate, these exclusions have cost the fund 0.06 percentage points of return over the last twelve years on an annualized basis.⁹⁹

Norway’s sovereign wealth fund has taken at least one substantial and controversial short position, though this position was in the bond market, not the stock market. In 2008, the fund reportedly invested hundreds of millions of dollars “to undermine Iceland’s economy” by shorting bonds of nearby Iceland’s banks.¹⁰⁰ The fund apparently believed the banks were about to experience financial hardship from a regional economic downturn.¹⁰¹ After Iceland publicly voiced its displeasure, the fund abandoned the position; it is not clear what financial return the fund received from the position.¹⁰²

Despite the potential political backlash, sovereign wealth funds may be well positioned to engage in short selling. The funds seem to face few restrictions on their investing strategies. Most funds are charged with the general requirement that they maximize financial returns for long-term policies,¹⁰³ and most funds are under no obligation to disclose publicly their short positions, which might generate wrath from short targets. Funds may face individualized investment limitations (such as Norway’s), but evidence on them is scant. Sovereign wealth funds generally do not publicize their positions, so it is possible that these funds have significant undisclosed short positions, or might establish such positions in the future.

⁹⁸ NORGES BANK INV. MGMT., RETURN AND RISK: GOVERNMENT PENSION FUND GLOBAL 16 (2017), <https://www.nbim.no/contentassets/db0b28dc13934aa6a56596d81d47a33a/return-and-risk-2017---government-pension-fund-global.pdf> [<https://perma.cc/XCU7-XYA7>] (discussing fund’s prohibition on investing in specific products and companies where there are “violations of fundamental ethical norms”).

⁹⁹ *Id.* (estimating loss accrued due to ethical exclusions).

¹⁰⁰ *Asset-Backed Insecurity – Sovereign-Wealth Funds*, ECONOMIST, Jan. 19, 2008, at 79 (discussing controversial shorting of Icelandic bonds by Norwegian fund).

¹⁰¹ *Id.* (noting Norway likely made decision to short Icelandic bonds because it sensed market boom was near the end).

¹⁰² *Id.*

¹⁰³ See, e.g., Shai Bernstein, Josh Lerner & Antoinette Schoar, *The Investment Strategies of Sovereign Wealth Funds*, 27 J. ECON. PERSP. 219, 220 (2013) (noting funds normally seek to maximize long-term benefits). The authors discuss how funds can diverge from this goal, particularly when facing direct involvement by domestic politicians who may favor short-term economic boosts at the expense of long-term returns. See *id.* at 231 (“[O]ur results lend support to the hypothesis that funds exposed to political influences show major deviations from long-run return maximization.”).

F. *Endowments*

Nonprofit endowments invest funds to further the nonprofit's mission. University endowments are perhaps the most familiar type of endowment. There are, however, other categories of institutions that also have endowments, including in healthcare, the arts, and other nonprofit industries.

States generally place few restrictions on endowment investment, allowing the individual endowment to impose any desired restrictions. This approach leaves endowments with significant flexibility to achieve their objectives, which they often utilize to invest in nontraditional ways.

Some endowments have used this flexibility to bet against stocks. For example, Harvard University's endowment, the largest endowment in the country at thirty-seven billion dollars,¹⁰⁴ has regularly purchased put options that pay off when security prices decrease.¹⁰⁵ The endowment also holds a sizable portion of its investments in an "absolute return" strategy (14% in 2016).¹⁰⁶ Although the composition of absolute return position is not disclosed, absolute return investing often uses short and derivative positions to make money independent of market movements.

Like sovereign wealth funds and pension funds, endowments occasionally face self-imposed restrictions on investing in certain industries or classes of companies. Harvard's endowment, for example, does not hold shares in tobacco companies or in companies involved in certain human rights violations.¹⁰⁷

In all states except Pennsylvania, endowments are also subject to the Uniform Prudent Management of Institutional Funds Act (the "UPMIFA").¹⁰⁸ The UPMIFA applies to restricted gifts and is designed to limit the spend down of these gifts.¹⁰⁹ Thirteen states have adopted language stating that if an endowment

¹⁰⁴ *Harvard at a Glance*, HARV. UNIV., <https://www.harvard.edu/about-harvard/harvard-glance> [<https://perma.cc/N7J6-BEUP>] (last visited Apr. 16, 2019) (noting endowment for fiscal year 2017 was \$37.1 billion).

¹⁰⁵ For instance, its Form 13F for the first quarter of 2016 shows eleven put positions encompassing bets against individual companies and broad U.S. stock market indices. Harv. Mgmt. Co., Information Table (Form 13F) (May 13, 2016) (detailing investments by Harvard endowment in first quarter of 2016).

¹⁰⁶ HARV. MGMT. CO., ANNUAL ENDOWMENT REPORT 2 (2016), http://www.hmc.harvard.edu/content/uploads/2019/03/FY16_HMC_Annual_Report.pdf [<https://perma.cc/P7PH-A945>] (detailing strategic asset allocation of endowment).

¹⁰⁷ *Investment for the Long-Term*, HARV. MGMT. CO., http://www.hmc.harvard.edu/investment-management/sustainable_investment.html [<https://perma.cc/3THD-YC5K>] (last visited Apr. 16, 2019) ("[T]he University recognizes that very rare occasions may arise when companies' activities are so deeply repugnant and ethically unjustifiable as to warrant the University's institutional dissociation from those activities.").

¹⁰⁸ BARBARA RHOMBERG, KAVANAUGH RHOMBERG LLP, ENDOWMENT LAW 2 (2017), <https://www.krnonprofitlaw.com/wp-content/uploads/2016/11/Law-of-Endowments-State-Bar-NPO-Cte-9.14.17-00016736xE48C5.pdf> [<https://perma.cc/7V7T-PBKR>].

¹⁰⁹ See, e.g., Brian Galle, *Why Do Foundations Follow the Law? Evidence from Adoption of the Uniform Prudent Management of Institutional Funds Act*, 36 J. POL'Y ANAL. & MGMT. 532, 536 (2017).

spends down greater than 7%, that expenditure will face a rebuttable presumption of imprudence;¹¹⁰ the remaining states have a balancing test for making this determination.¹¹¹ The UPMIFA, however, does not restrict investment in any particular type of security, stating that “[e]xcept as otherwise provided by law other than this [Act], an institution may invest in any kind of property or type of investment.”¹¹² To that end, nonprofit endowments face similar prudent investor standards as do pension plans and trustees. Investment decisions under this statutory regime are evaluated through a reasonably prudent investor lens, based on the portfolio as a whole.¹¹³ It is unclear whether short positions violate this standard. As long as an endowment has short positions that are not very large or focused, they should be permissible under the UPMIFA.

G. Foundations

Private foundations consist of pools of money designed to achieve defined charitable purposes. The Bill and Melinda Gates Foundation, for example, applies its approximately fifty-two billion dollars in assets to reducing global human inequality.¹¹⁴ Private foundations have several relevant restrictions imposed by the IRS if they wish to have tax-advantaged treatment. First, they are required to distribute their annual income to charitable organizations or face a 30% tax.¹¹⁵ Second, they are prohibited from holding more than a 20% share of any business, or else they must pay a 10% penalty on the excess holding.¹¹⁶

The IRS imposes no other relevant restrictions on private foundation investments, and there are no specific rules regarding the use of short positions. Foundations will, however, be governed by the UPIA (if structured as a trust) or the UPMIFA (if structured as a nonprofit organization). As discussed above, neither of these Acts appears to prohibit the use of any particular investment

¹¹⁰ ARNOLD & PORTER LLP, UPMIFA AND UMIFA ENACTMENT 1-2 (2009), [https://files.arnoldporter.com/upmifa%20chart%20\(nov.%206,%202009\).pdf](https://files.arnoldporter.com/upmifa%20chart%20(nov.%206,%202009).pdf) [<https://perma.cc/P7TV-HF N6>] (identifying thirteen states with rebuttable presumption of imprudence for expenditures greater than 7% in year); Galle, *supra* note 109, at 536 (“More than a dozen states enacted this provision.”). This includes Ohio’s provision that expenditures below 5% are presumptively prudent. OHIO REV. CODE ANN. § 1715.53 (West 2018).

¹¹¹ ARNOLD & PORTER LLP, *supra* note 110, at 1-2 (noting states that lack rebuttable presumption of imprudence).

¹¹² UNIF. PRUDENT MGMT. OF INSTITUTIONAL FUNDS ACT § 3(e)(3) (NAT’L CONF. OF COMM’RS ON UNIF. STATE LAWS 2006).

¹¹³ *Id.* at § 3(b) (“[E]ach person responsible for managing and investing an institutional fund shall manage and invest the fund in good faith and with the care an ordinarily prudent person in a like position would exercise under similar circumstances.”).

¹¹⁴ *Who We Are: Financials*, BILL & MELINDA GATES FOUND., <https://www.gatesfoundation.org/Who-We-Are/General-Information/Financials> [<https://perma.cc/C3RT-KTJS>] (last visited Apr. 16, 2019) (“The foundation works to reduce inequities around the world.” (emphasis omitted)). This number includes the Foundation’s beneficial interest in related trust assets.

¹¹⁵ 26 U.S.C. § 4942(a) (2012).

¹¹⁶ *Id.* § 4943(a)(1), (c).

security, instead requiring an assessment of whether the portfolio as a whole conforms to reasonably prudent investor choices.¹¹⁷ While individual foundations might impose restrictions on their own investments, there do not appear to be any general regulatory roadblocks against foundation shorting.

II. SHORT ADVANTAGES

Before we consider whether and how institutional investors could become more involved in short selling, we first turn to an analysis of the potential advantages of such increased involvement.

A. *More Accurate Securities Prices*

Maintaining accurate securities prices is desirable for several reasons. The price of a security can be a useful signal to identify the extent to which firms can generate value from investment.¹¹⁸ If a firm's securities carry a price that is too high relative to the firm's ability to produce, that firm will attract more capital than it otherwise should; if the price is too low, the firm will receive too little.¹¹⁹ Accurate pricing of securities contributes to the more efficient allocation of capital.¹²⁰

Under most models of securities pricing, securities prices are based on the information available in securities marketplaces. Having accurate available information is therefore critical to having accurate securities prices. Companies already have incentives to publicize positive information about their operations. Positive information keeps share prices high, painting management in a positive light, making it easier for the company to raise future funds, and increasing executive compensation that depends on performance measured by securities prices.¹²¹

The incentive to release negative information is markedly less. Although public companies must disclose certain (positive or negative) information pursuant to mandatory periodic disclosure rules, these disclosure categories cover only certain enumerated-types of information. The same forces that push voluntary disclosure of additional positive information also otherwise dissuade voluntary disclosure of additional negative information.

¹¹⁷ See *supra* Sections I.D, I.F (discussing UPIA and UPMIFA requirements of conformity to reasonably prudent investor choices).

¹¹⁸ See, e.g., Marcel Kahan, *Securities Laws and the Social Costs of "Inaccurate" Stock Prices*, 41 DUKE L.J. 977, 1005-08 (1992) (noting "accurate stock prices further efficient allocation of capital").

¹¹⁹ *Id.* at 1006 (discussing how discrepant stock prices result in inefficient investments).

¹²⁰ *Id.* ("When stock prices are accurate, new investors pay for newly issued shares exactly what they are worth.")

¹²¹ Alex Edmans, Xavier Gabaix & Dirk Jenter, *Executive Compensation: A Survey of Theory and Evidence* 151 (CESifo, Working Paper No. 6585, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2992287 (identifying use of management performance-based pay).

The disclosure of negative information, therefore, is particularly useful and important. But since releasing negative information tends to decrease associated securities prices, long-only investors may not have enough financial incentive to invest in discovering and disclosing this information.

There are two ways for long investors to benefit from disclosing negative information. One would be to sell or underweight the affected security before the information otherwise gets out, avoiding losses. By trimming overpriced securities from their long portfolios, the long investor sends a signal through her sale that the shares are overpriced; this signal might eventually be incorporated into the security price. But the prospect of selling shares to avoid losses does not necessarily give institutional investors sufficient returns to warrant devoting resources to discovering and disclosing negative information, since her potential returns are capped by the amount of overpriced stock holdings.

Consider, for instance, an institutional investor with a diversified portfolio of one hundred equally weighted stocks. Each stock constitutes only 1% of the overall portfolio's value. If the institutional investor believes one stock is overvalued by 10%, the maximum returns from *completely* liquidating her position and avoiding the later loss from the security's correction are only 0.1% of the portfolio value. As the portfolio becomes more diversified, the potential returns to discovering and disclosing negative information about small holdings becomes proportionately lower.¹²² Long-only portfolios therefore might not fully reveal negative information they have already acquired as a byproduct of other research; underweighting those securities will only partially capitalize the information into stock prices, and the costs of negative disclosure can prevent the fund from otherwise revealing its information.¹²³

On the other hand, if the fund believes the stock is undervalued, it can use its long holding strategy to buy more of the undervalued shares, yielding returns constrained only by the assets of the fund (and any restrictions on investment concentration). Long investors therefore have disparate incentives to discover and disclose positive, not negative, information.

Another way for long investors to benefit from disclosing negative information would be to buy shares in other securities that are expected to rise with the negative information. This method offers long investors the potential for greater gains, since their capacity to buy other shares is less limited than their capacity to sell. On the other hand, this method comes with greater potential risk.

¹²² For example, Vanguard's Total Stock Market Index Fund held 3,615 stocks as of April 16, 2019. *Vanguard Total Stock Market Index Fund Investor Shares*, VANGUARD, <https://investor.vanguard.com/mutual-funds/profile/portfolio/vtsmx> [<https://perma.cc/EBE7-PMCT>] (last visited Apr. 16, 2019). If these holdings were equally weighted, each stock would comprise only 0.027% of the overall portfolio. Because the holdings are not equally weighted, several of them will represent a far lower percentage of the overall portfolio.

¹²³ See *supra* note 7 and accompanying text (highlighting adverse consequences that may result from negative disclosure). For this reason in particular, we recommend that investment funds have at least one long-short fund in its family to act upon negative information uncovered by analysts during their long-only research.

The fund must not only be able to predict that its negative information will be viewed as material in the marketplace, but it must also be able to predict which alternative securities will rise as a result of the information's release.

For example, if the fund knows that a popular restaurant chain is suffering from an undisclosed E. coli outbreak, the fund might reasonably think this news will negatively impact the chain's stock price. Perhaps that means the shares of competing chains will rise, as traffic is driven to these competitors. On the other hand, competitors' share prices could instead decline, due to broader fears about food safety and concerns about reductions in restaurant patronage more generally.

For long-only investors, the rewards from uncovering negative information are lower and the costs of disclosing it are higher relative to positive information. Assuming that information is distributed across both positive and negative types, we can expect comparatively less negative information to enter the securities marketplace than positive information, even before taking into account firms' disproportionate incentive to disclose positive information. The result is a biased picture of firms' operations, leading to an inefficient allocation of capital.

If investors engaged in shorting, however, this picture can begin to be corrected by making the rewards from acting on negative information comparatively larger. By shorting the affected security, investors can profit directly from discovering and releasing negative information, without being constrained by the size of a long holding or the need to find a negatively correlated competitor stock. Indeed, this is an effective strategy employed by many hedge funds.¹²⁴

The optimal result would be where there is sufficient short selling to lead to both positive and negative information being reflected in stock prices. Our claim is that the various restrictions of short selling lead to an inefficient informational bias. Under these conditions markets would still be biased towards positive information because companies would voluntarily disclose disproportionately positive information about themselves, investors would continue to face comparatively high regulatory and legal costs from disclosing negative information, and shorting would therefore be a comparatively expensive form of investment.¹²⁵ But the problem would be less severe. As the rewards to uncovering and disclosing negative information increase, more negative information should be uncovered and capitalized into securities prices, leading to more efficient securities prices as a result.¹²⁶

¹²⁴ For empirical analysis of this phenomenon, see generally Bliss, Molk & Partnoy, *supra* note 36.

¹²⁵ See *supra* notes 5-9 and accompanying text (noting structural phenomena that cause markets to bias positive information over negative information).

¹²⁶ See Vivian W. Fang, Allen H. Huang & Jonathan M. Karpoff, *Short Selling and Earnings Management: A Controlled Experiment*, 71 J. FIN. 1251, 1254 (2016) (finding short selling to improve asset pricing efficiency).

B. *Greater Management Discipline*

As mentioned above, firm management has incentives to release disproportionately positive information about company operations. If negative information is not discovered and released, another problem unfolds in addition to inefficiently priced securities: management may lack the incentive to perform its job with diligence. The separation of ownership and control in large firms leaves management often with no effective monitor, generating the agency costs familiar in corporate law.¹²⁷

Since shorting increases the financial returns from discovering negative information, its presence also increases the likelihood of discovering management's misbehavior. Short selling could lead to relatively quick corrections, and the enhanced threat from short sellers could deter managers and reduce agency costs.¹²⁸ Professors Fang, Huang, and Karpoff find empirical support for precisely this hypothesis: the threat and presence of short selling reduces management's manipulation of earnings numbers and fraudulent conduct.¹²⁹

Thus, short selling can help mitigate the fundamental agency cost problem of corporations. An optimal amount of shorting, including shorting by institutional investors, could help minimize agency costs, both by increasing the discovery of management misdeeds and by increasing the threat that any potential other misdeeds will be discovered and corrected.

C. *Address Shorting and Lending Problems*

The daisy chain of share lending continues to generate difficulties.¹³⁰ The initial problems arose from the fact that a holder of shares that (unknowingly to her) have been loaned out to a shorter, and the later purchaser of those lent shares, cannot both have voting rights; each share is to have a single vote, not two or more. In some instances, the number of shorted shares has even exceeded the number of outstanding shares.¹³¹ Share lending creates the illusion that there are more shares beneficially owned than actually registered.

¹²⁷ See, e.g., Eugene F. Fama & Michael C. Jensen, *Separation of Ownership and Control*, 26 J.L. & ECON. 301, 304-05 (1983) (discussing how separation of management from control creates agency costs).

¹²⁸ Massimo Massa, Bohui Zhang & Hong Zhang, *The Invisible Hand of Short Selling: Does Short Selling Discipline Earnings Management?*, 28 REV. FIN. STUD. 1701, 1702-03 (2015) (detailing how short selling can discipline management).

¹²⁹ Fang, Huang & Karpoff, *supra* note 126, at 1287 (finding short selling "curbs managers' willingness to manipulate earnings").

¹³⁰ Legal scholars have discussed these problems for more than a decade. See, e.g., Kahan & Rock, *supra* note 19, at 1257 (discussing impact of securities lending); Martin & Partnoy, *supra* note 19, at 780 (discussing issues that arise due to share lending).

¹³¹ See, e.g., Ganesh, LLC v. Comput. Learning Ctrs., Inc., 183 F.R.D. 487, 491 (E.D. Va. 1998) (noting that the six million shares of Computer Learning Centers sold short exceeded the company's actual float).

At first blush, it might appear that increasing the amount of short selling by encouraging institutional investors to engage in more shorting would exacerbate problems associated with share lending. However, there are reasons to believe the opposite would be true. Although short interest overall would increase, and a greater percentage of shares of companies would be shorted, the additional liquidity associated with greater shorting could help prevent certain difficulties, including short squeezes. Moreover, if institutional investors were more involved in short selling, they naturally would apply pressure to rationalize various aspects of the share lending market, such as double voting from lent shares.

In contrast, today institutional investors benefit from many of the dysfunctional aspects of short selling. Institutional investors earn significant fee income from lending shares. In some instances, this income is the main way for these institutional investors to demonstrate good performance, or be able to track, and not underperform, a benchmark index.

However, the fact that these institutional investors also face pressures to call back their shares during certain important events, such as voting in proxy fights, leads to imbalances in the markets. If institutional investors were not only share lenders, but also short sellers, they naturally would counterbalance the pressure for shares to be recalled at certain times.

Perhaps most important, if institutional investors were significant participants in short selling, there might be more pressure from important constituencies, such as the Council of Institutional Investors, to reform various aspects of share lending practices. Institutional investors would be more likely to explore alternatives to share lending, methodologies for broker determinations of how to allocate share rights, and the use of blockchain technologies for tracking individual shares as they are loaned out. The involvement of institutional investors likely could shift the debate from one driven by a handful of short sellers to one driven by mainstream institutional investors.

D. *Voting, Taxation of Dividends, and Bankruptcy*

To the extent institutions become more involved in short selling, they likely would encounter challenges related to the distribution of shareholder rights. The most straightforward challenge is voting. There, as noted above, more than one “shareholder” can believe they are entitled to vote, but only the final purchaser of loaned out shares actually has that right.¹³²

Similar difficulties arise with respect to dividends. Corporations pay a dividend only once per share. When shares are loaned out, more than one person purchases the share, which means more than one dividend must be paid. The last

¹³² See Martin & Partnoy, *supra* note 19, at 798 n.108 (“SEC and NYSE rules provide that one may vote only shares in one’s ‘possession and control.’”); see also Commodity and Securities Exchanges, 17 C.F.R. § 240.15c3-3 (2018) (requiring broker or dealer to maintain possession or control over all securities carried for customers); N.Y. STOCK EXCH. RULES, R. 452 (2003) (detailing who is eligible to vote stock).

purchaser of a loaned share is the only person with the right to receive a dividend from the corporation. The other, earlier purchasers have the right to receive payments equal to the dividend amount from the short seller. Those dividends can be taxed differently, as they are not dividends from the company in the traditional sense, leading to suboptimal results, high transaction costs, and potentially fairness concerns.

Similar problems arise in bankruptcy, though those challenges are limited by the fact that equity interests typically receive little or nothing in a bankruptcy distribution. In a settlement or other proceeding, only the final purchaser of a share has the right to receive a distribution from the debtor estate. Earlier purchasers must look to the anonymous short seller for any payment.

Likewise, in a shareholder litigation settlement or judgment, only the final purchaser of loaned shares should legally be entitled to any distribution from a settlement or common fund. Yet the required proof of class membership typically does not involve proof related to share lending; instead, one need only prove that shares were purchased.

Greater involvement of institutional investors in short selling would alert a wider swath of the financial community to these challenges, creating greater pressure for both private ordering and regulatory solutions. Instead, any pressure for reform now comes from a small minority of the investing community.

We pause to note briefly the impact of shorting for one proposed reform in this area: blockchain technology in the financial markets.¹³³ As noted above, shareholders often need to show they qualify for fundamental legal rights as holders of shares. These include not only voting and litigation, but appraisal, books and records requests, proxy fights, and shareholder proposals. Blockchain reforms have the potential to help clarify who is entitled to exercise shareholder rights, but when we consider the impact of shorting (whether institutional or otherwise), the use of blockchain also raises further complications, such as whether the holder of the equity claim holds a claim against the corporation or against some amorphous group of lenders and short sellers.

For example, it remains unclear whether blockchain technology would streamline voting. Instead, voting might become more complex due to the share recalls that inevitably would occur before votes if shareholders were aware of a distributed ledger and behaved rationally. Imagine that a single share has been loaned out ten times, and then a vote is announced. Any one of the ten purchasers at any point could call that specific share, leading to the unwinding of all of the short positions (or at least a need to replace that share with a different loaned share). In such instances, tracing through blockchain could create problems that previously were masked by the treatment of shares as fungible.

Likewise, the use of blockchain technology likely would pose challenges related to dividends and other rights. Some shareholder rights require individual share-level identification, even if it would be very costly or difficult to pinpoint

¹³³ See George S. Geis, *Traceable Shares and Corporate Law*, 113 Nw. U. L. REV. 227, 256-57 (2018) (discussing emergence of blockchain technology).

the actual share, while other rights arguably require only category-level identification. Given the speed of trading, and amount of high-frequency trading, it might be difficult for even the most sophisticated blockchain technology to keep up with rapidly changing distributed ledgers. If there is uncertainty in the recordation process, so that particular details do not show up instantaneously in the blockchain, the ledger might inevitably be slightly behind (indeed, some automated trading systems might have incentives to try to take advantage of this slight delay). It might be that an instant auction system would work better than a distributed ledger, collecting all buy and sell orders and then matching and clearing them in an auction, perhaps a few times per day.

Of course, a distributed blockchain ledger would let a shareholder figure out who the downstream owner of each share is as of a particular time, but it could be difficult and costly, if not impossible, for the owner to call back that specific share. Overall, short selling and share lending creates problems for blockchain technology, even if it is possible to trace shares accurately and efficiently. Institutional investors that were involved in both share lending and short selling would have a greater stake in determining optimal policy choices in response to these challenges.

E. *Engagement with Public Policy*

From time to time, institutional investors find it in their constituents' interest (or, in the case of certain public pension funds, are required by the state) to engage in public policy matters. One familiar example of this engagement has been university endowments' refusal to invest in tobacco companies or certain other industries they find to be objectionable.¹³⁴ Public pension funds, notably including the California Public Employees' Retirement System ("CalPERS"), also have pursued this strategy.

Sovereign wealth funds also sometimes pursue public policy goals as part of their investment decisions. For instance, based on its belief that Wal-Mart was using child labor, Norway's sovereign wealth fund sold its \$400 million stake in Wal-Mart stock; it also later sold its \$450 million stake in Duke Energy because of criticisms of Duke Energy's environmental record.¹³⁵

Even private foundations and insurance companies occasionally divest investments from companies they deem objectionable. For example, the Rockefeller Brothers Fund, a private foundation helping to improve humanity,

¹³⁴ See *supra* note 107 and accompanying text (discussing restrictions on certain investments, including tobacco and other "ethically unjustifiable" companies, for Harvard University's endowment).

¹³⁵ Kjetil Malkenes Hovland, *Norway's Sovereign-Wealth Fund to No Longer Invest in Duke Energy*, WALL STREET J. (Sept. 7, 2016, 2:06 PM), <https://www.wsj.com/articles/norway-sovereign-wealth-fund-to-no-longer-invest-in-duke-energy-1473271601?ns=prod/account-s-wsj> (discussing Norway's divestment from Wal-Mart and Duke Energy); Mark Landler, *Norway Backs Its Ethics with Its Cash*, N.Y. TIMES, May 4, 2007, at C1 (discussing Norway's movement toward ethical investment choices, which includes scrutiny of companies with human rights violations like Wal-Mart).

divested its one-billion-dollar endowment almost entirely from fossil fuels, and completely from companies involved in coal and tar sands.¹³⁶ Allianz, a prominent global insurer, announced it would stop selling insurance policies to coal companies in an attempt to reduce global use of fossil fuels.¹³⁷ Lloyd's of London divested coal companies from its investments.¹³⁸ AXA determined it would discontinue insuring, and divest \$800 million in investments from, companies and oil pipelines related to the North American tar sands development.¹³⁹

Finally, some investment funds have been built entirely around the idea of engaging in public policy. Socially responsible investment funds, for example, target companies and industries they perceive as furthering various social policies such as environmental responsibility or employee relations.¹⁴⁰

To date, institutional investors' engagement with public policy occurs almost exclusively through a refusal to buy certain companies they find objectionable, or through the sale of existing holdings in those companies. In other words, they engage with public policy through their use or withholding of long positions. Short selling offers an opportunity for institutional investors to take an even stronger position against certain companies or industries. Instead of passively refusing to buy, or reducing a long position, institutional investors could sell shares they do not yet own, signaling even greater displeasure than is possible with long interests alone. Moreover, to the extent public policy engagement matches up with future economic activity, shorting allows institutional investors the means to profit off public policy positions, perhaps increasing their engagement in these important matters.

¹³⁶ *Fossil Fuel Divestment*, ROCKEFELLER BROTHERS FUND, <https://www.rbf.org/misaligned-investing/divestment> [<https://perma.cc/AE6E-9ELU>] (last visited Apr. 16, 2019) ("We committed to reducing our exposure to coal and tar sands—two of the most intensive source of carbon emissions—to less than one percent of the total portfolio by the end of [2005].").

¹³⁷ Riham Alkousaa, *Allianz Cuts Back on Coal Insurance After Environmentalism Criticism*, REUTERS (May 4, 2018, 6:17 AM), <https://www.reuters.com/article/us-allianz-climatechange/allianz-cuts-back-on-coal-insurance-after-environmentalist-criticism-idUSKBN1I511D> [<https://perma.cc/MD35-B6T9>] ("Germany's Allianz will immediately stop insuring single coal-fired power plants and coal mines . . .").

¹³⁸ Julia Kollwe, *Lloyd's of London to Divest from Coal Over Climate Change*, GUARDIAN (Jan. 21, 2018, 10:35 AM), <https://www.theguardian.com/business/2018/jan/21/lloyds-of-london-to-divest-from-coal-over-climate-change> [<https://perma.cc/WU5U-8LAW>] ("Lloyd's will start to exclude coal from its investment strategy from 1 April.").

¹³⁹ Press Release, AXA, AXA Accelerates Its Commitment to Fight Climate Change (Dec. 12, 2017, 9:00 AM), <https://group.axa.com/en/newsroom/press-releases/axa-accelerates-its-commitment-to-fight-climate-change> [<https://perma.cc/J7LM-CX7L>] (announcing divestments decisions designed to fight climate change).

¹⁴⁰ See, e.g., CHARLES SCHWAB, SOCIALLY CONSCIOUS FUNDS LIST 1 (2018), <https://www.schwab.com/public/file/P-9561751/> [<https://perma.cc/T96P-PVPP>] ("A socially conscious fund may take a proactive stance by selectively investing in, for example, environmentally friendly companies or firms with good employee relations.").

For example, if coal companies were to become less valuable over time (perhaps in part due to institutional investors' attempts to manage greenhouse gas emissions), shorting those companies today offers the prospect of financial returns from policy engagement. Current strategies of divesting holdings merely offer the prospect of avoiding future losses. Or, a socially responsible investment fund that sought to double down on its mission might not merely buy socially responsible companies, but also short "vice" companies to amplify its socially responsible stake.

Whether more public policy engagement by institutional investors is normatively desirable is an issue that is largely outside the scope of this Article. To the extent institutional investors' policy goals diverge from those of the public at large, there could be major costs from policy engagement.¹⁴¹ Institutional investors might press for policy changes that benefit their short positions, at the expense of society overall.¹⁴² However, in the current environment of increasing interest in stakeholder representation, one could certainly make a case for increasing this engagement.

III. INCREASING INSTITUTIONAL SHORTING

Given the potential advantages of increased institutional short selling, we conclude by considering ways institutions might go about increasing their shorting activity. Given the difficulties—and perhaps undesirability—of attempting wholesale regulatory change, we consider exclusively the domain of working within existing regulatory constraints. Our possibilities can be divided into two general categories: indirect participation in shorting and direct participation in shorting.

A. *Indirect Participation*

Perhaps the easiest way for institutional investors to increase their shorting activity would be through indirect participation: investing in entities that in turn engage in short selling. Institutions might, for example, invest in a hedge fund that regularly engages in active shorting campaigns.

To some extent, limited indirect participation is already occurring. It is not unusual for university endowments to hold some positions in hedge funds and other entities that engage in shorting.¹⁴³ Sovereign wealth funds also on occasion

¹⁴¹ See, e.g., Memorandum from FTI Consulting to Indep. Petroleum Ass'n of Am. (May 23, 2016), [<https://perma.cc/X9JA-8J9E>] (reporting survey results, sponsored by oil and gas trade association, identifying divergence between pension and pensioner opinions regarding divestment from oil and gas companies).

¹⁴² For charitable organizations like foundations and public charities with endowments, some of this concern might already be mitigated through prohibitions against political activities and lobbying.

¹⁴³ Harvard's endowment, for example, invests 14% of its endowment in an absolute return strategy, mimicking hedge fund investments. HARV. MGMT. CO., *supra* note 106, at 2 (noting 14% of assets invested in "absolute return"). Yale's endowment has a 25% targeted allocation

hold similar interests.¹⁴⁴ Actively managed mutual funds may deploy shorting in their overall money-making endeavors; some mutual funds engage almost exclusively in shorting.¹⁴⁵

As discussed in Part I, apart from banks and insurance companies, there do not appear to be regulatory impediments to indirect shorting. Moreover, even banks and insurance companies potentially could engage in some indirect shorting. For example, insurance companies are permitted to invest 20-25% of their capital in equity securities;¹⁴⁶ at least some of those amounts could be invested in entities that short. Overall, indirect shorting appears to be feasible for most institutional investors, even without regulatory change.¹⁴⁷

Indirect participation offers some of the advantages discussed in Part II. By investing in other short-sellers, institutions would be indirectly increasing the presence of short selling activity, potentially leading to more accurate securities prices and greater managerial discipline while increasing the pressure to reform shorting's lending practices. The increased short selling would occur even if these institutional investors did not have direct control over the short selling.

Nevertheless, indirect participation offers less flexibility to use shorting to engage with public policy concerns. Because institutions themselves would not have the short positions, they would be dependent on the short-sellers that they invest in to achieve any desired policy goals. Conceivably, if there were enough appetite for the specialized short-sellers, short-sellers might emerge to accommodate demand for various policy campaigns. The emergence of various socially responsible investment funds speaks to this potential. As of yet, however, such shorting specialists do not appear to exist in significant size, making this a sacrifice institutional investors will have to bear in exchange for only indirect participation in shorting.

to these investments. YALE INVS. OFFICE, THE YALE ENDOWMENT 12 (2017), http://investments.yale.edu/s/Yale_Endowment_17.pdf [<https://perma.cc/EN4W-SA9Y>] (“Today, the absolute return portfolio is targeted to be 25.0% of the Endowment . . .”).

¹⁴⁴ For instance, Singapore's sovereign wealth fund has been reported to invest 25% of its assets in shorting hedge funds. CURTO, *supra* note 26, at 3 (noting “a quarter of Singapore's SWF is believed to be” invested through hedge funds that short).

¹⁴⁵ These funds are generally referred to as bear market funds, as they aim to make money when overall markets decline. For example, the Grizzly Short Fund, with \$100 million in assets under management, aims to have all its assets invested in shorting individual stocks. LEUTHOLD FUNDS, GRIZZLY SHORT FUND 1 (2015), (noting fund “endeavors to remain 100% short individual stocks at all times”).

¹⁴⁶ State risk-based capital requirements might result in insurers' having to adjust this percentage downward to satisfy solvency requirements, depending on the insurer's overall mix of assets.

¹⁴⁷ Of course, if the institution's governing documents restrict the institution's ability to invest in shorting entities, these documents would have to be amended, or else the individual institution could not participate. But this presents only individualized issues unique to individual institutional investors, rather than a systemic problem shared across institutional investors.

B. *Direct Participation*

In addition to indirect participation, institutional investors could directly engage in more short selling. The easiest way to do so would, of course, be to take direct short positions in companies. As discussed in Part I, many institutional investors face no barriers to direct engagement in shorting. Other institutional investors, such as insurance companies and banks, face clear regulatory prohibitions against uncovered shorting and will not have this option available.

Some institutional investors fall between these two poles. One group includes pension plans, trustees, and foundations, which are governed by prudent investor standards. As discussed above, this open-ended standard does not appear to preclude direct engagement in shorting.¹⁴⁸ At the same time, direct shorting has not explicitly been determined to fall within a prudent investor's portfolio. Given the negative ramifications of being held to have violated this standard, these institutional investors understandably might shy away from significant direct shorting. To resolve the uncertainty and potentially encourage these institutional investors' participation, we recommend that courts or legislatures clearly determine (one way or another) whether shorting could fit within a prudent investor's activities.

Another group of institutional investors that fall into a middle area between clear prohibitions and clear direct engagement are institutional investors who seek to track a relevant index. Mutual funds present an obvious example, but many other types of institutional investors also have adopted strategies requiring them to mimic relevant benchmark indices. Norway's sovereign wealth fund is mandated to track an equity index published by FTSE and a bond index published by Barclays,¹⁴⁹ and endowments may have to benchmark their performance against various indexes.¹⁵⁰ At first glance, being forced to mimic an index's performance seemingly precludes direct shorting, unless the index includes a short position.

Nevertheless, for these middle-pole investors, there is still significant room for direct shorting. As a practical matter, index tracking funds typically have some flexibility, both in the securities they hold and in how closely they track the index. Even Vanguard, one of the leading passive mutual fund families, notes that its index funds "seek[] to hold all, or a *representative sample*, of the

¹⁴⁸ See *supra* Sections I.C, I.D, I.G (discussing institutional investors governed by prudent investor standards).

¹⁴⁹ *Investment Strategy*, NORGES BANK INV. MGMT., <https://www.nbim.no/en/investments/investment-strategy/> [<https://perma.cc/R79S-QR93>] (last visited Apr. 16, 2019) ("The benchmark index is set by the Ministry of Finance on the basis of indices from FTSE Group and Bloomberg Barclays Indices.").

¹⁵⁰ See *supra* Section I.F (discussing investment strategy of endowments).

securities that make up its target index.”¹⁵¹ Index funds can and do hold more or fewer securities than the indices they track, which means that returns may deviate from the index’s returns, contributing to tracking error.

Tolerance for tracking error opens the possibility for index tracking institutional investors to engage in direct shorting. If the investor wants to short a stock while still hewing closely to a benchmark, all she needs to do is find another stock that is highly correlated and increase her long exposure in this other stock. To take a simplified example, suppose Stock *A* and Stock *B*, each priced at fifty dollars per share, are perfectly correlated with one another. Amy holds one share of *A* and one share of *B*, for a total investment of one hundred dollars. Beatrice shorts one share of *A* and holds three shares of *B*, for a total investment of one hundred dollars. Amy and Beatrice each have one hundred dollar portfolios and, ignoring transaction costs, each will earn identical returns. If the price of *A* (and therefore the price of *B*) increases by one dollar, Amy earns one dollar on each of her two shares, netting two dollars. Beatrice loses one dollar on her short *A* position but makes three dollars on her *B* position, also netting two dollars.

Of course, other than perhaps for public policy reasons, there is little reason to construct a portfolio with two perfectly correlated stocks, and in practice finding two perfectly correlated stocks is unlikely. However, if an index-following institutional investor who wishes to short a stock can find another stock that is highly but not perfectly correlated, she has a viable strategy. Let us suppose our institutional investor wished to short McDonalds stock, perhaps because she believes it is overvalued or she objects to the way it is being run. Our investor could combine a short position in McDonalds with a long position in YUM Brands; the two stocks over a recent thirty-day trading period had a high correlation coefficient of 0.86.¹⁵² This short/long strategy will expose our institutional investor to the profit potentials and risk factors the two companies have in common, giving her exposure to the restaurant industry that is reasonably close to the long positions in both companies. Any factors unique to McDonalds would contribute to tracking error, but as long as the McDonalds short did not comprise too large a portion of the portfolio, or as long as the

¹⁵¹ VANGUARD, VANGUARD 500 INDEX FUND PROSPECTUS 6 (2018), <https://personal.vanguard.com/pub/Pdf/p040.pdf> [<https://perma.cc/3X8M-BXJP>] (emphasis added) (defining what indexing entails).

¹⁵² *Comparative Equity Analysis*, MACROAXIS, <https://www.macroaxis.com/invest/market/YUM--compareProfile--MCD> [<https://perma.cc/QH5A-53WQ>] (last visited Apr. 16, 2019) (comparing performance of McDonalds and YUM Brands). In many circumstances, our investor might achieve an even higher correlation by going long in a basket of similar stocks, such as by adding several quick serve restaurants to her portfolio in this example. In that case, she could take an even larger short position in McDonalds before incurring significant tracking error.

tolerance for tracking error is high enough, the institutional investor could still track a long equity benchmark while engaging directly in short selling.¹⁵³

To the extent there are potential gains from short selling, institutional investors could capture those gains by selectively adding short positions and becoming correspondingly less diversified in their long positions. They could select stocks they believe are overvalued, or that they would like to bet against for some investment or social purpose, and then simultaneously sell short those stocks and buy a corresponding amount of other stocks in their long portfolio. For example, an investor with one billion dollars invested in five thousand stocks might select fifty stocks in which to take a one hundred million dollar short position, and then reallocate its investments to \$1.1 billion invested in the remaining 4,950 stocks, adopting a "110/10" position for a net long exposure of one billion dollars. The result would be a fully invested net long position that would have greater concentration in some companies, and negative positions in others.

CONCLUSION

In many circumstances, institutional investors do not appear to engage significantly in short selling despite potential gains and an absence of formal barriers. In this Article, we have sought to demonstrate that institutional shorting is a viable strategy, with potentially promising gains to the investors and, in some cases, to society at large. Where it is not prohibited, we recommend that institutional investors consider shorting as a piece of their overall investment package, perhaps as part of a 110% long/10% short or similar strategy. Where institutional shorting is prohibited, this Article recommends a careful weighing of the policy arguments in favor of and against the prohibition and the consideration of direct and indirect strategies that might nevertheless be possible within the existing regulatory regime.

¹⁵³ This assumes that the assets are not prohibited from being put into short positions, either by regulation in the case of banks and insurance companies, or by self-imposed restrictions as in the case of many index mutual funds or other types of institutional investments discussed in Part I.

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