

Rewiring Corporate Law for an Interconnected World

Law Working Paper N° 572/2021

March 2021

Luca Enriques

University of Oxford, EBI and ECGI

Alessandro Romano

Bocconi University

© Luca Enriques and Alessandro Romano 2021. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

This paper can be downloaded without charge from:
http://ssrn.com/abstract_id=3814822

<https://ecgi.global/content/working-papers>

ECGI Working Paper Series in Law

Rewiring Corporate Law for an Interconnected World

Working Paper N° 572/2021

March 2021

Forthcoming in *Arizona Law Review*, Issue 64:1

Luca Enriques
Alessandro Romano

We are grateful to Ron Gilson for the fruitful discussions and the numerous comments on earlier drafts, and Henry Hansmann, Kenneth Khoo, Sebastián Guidi and other participants to the Bocconi Corporate Law Workshop for helpful comments. Giulia Ballerini, Margherita Corrado and Georgios Pantelias provided excellent research assistance. Usual disclaimers apply.

© Luca Enriques and Alessandro Romano 2021. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Abstract

The traditional focus of corporate law is on aligning managers' preferences to the interests of shareholders. This view is premised on two assumptions that are no longer true: first, the idea that all shareholders want to maximize the net present value of the firm's earnings per dollar invested; and, second, the view that microeconomic shocks do not produce macroeconomic consequences. The rise of institutional investors undermines the first assumption, since large asset managers hold the entire market and have been shown to display a preference for maximizing the value of their portfolio as a whole, with limited interest in the performance of specific companies: that is, they are "portfolio value maximizers." At the same time, the increasingly interconnectedness of the economy, and society more broadly, undermines the second assumption, as there is ample empirical evidence demonstrating that microeconomic shocks can propagate through the existing interconnections and generate catastrophic consequences. We also show how a subset of firms, those "central" to the network of interconnections that comprises the economy, is responsible for those shocks. We argue that corporate law should reflect these features of contemporary economies, and hence change its fundamental purpose. On the one hand, it should aim to ensure that non-central firms maximize their own value, despite the rise of portfolio value maximizers. On the other hand, in central firms it should harness the preferences of portfolio-value-maximizing shareholders with the goal of minimizing the risk of catastrophic externalities like climate change or financial crises. We develop a framework to guide policymakers in the pursuit of this new fundamental conception of corporate law and provide concrete examples of how changes in the rules on dual class shares, tenure voting, and ownership disclosure could account for these changes.

Keywords: Common ownership, Corporate Law, Corporate Governance, Universal Owners, Systemic Externalities, Dual Class Shares, Hedge Fund Activism

JEL Classifications: G20, G28, G30, G34

Luca Enriques*

Professor of Corporate Law
University of Oxford, Faculty of Law
St. Cross Building, St. Cross Road
Oxford, OX1 3UL, United Kingdom
phone: +44 186 528 9751
e-mail: luca.enriques@law.ox.ac.uk

Alessandro Romano

Assistant Professor
Bocconi University, School of Law
Via Roentgen, 1
Milan, Milan 20136, Italy
e-mail: alessandro_romano@unibocconi.it

*Corresponding Author

Rewiring Corporate Law for an Interconnected World

Luca Enriques (*)
Alessandro Romano (**)

February 2021

Forthcoming in *Arizona Law Review*, Issue 64:1

ABSTRACT

The traditional focus of corporate law is on aligning managers' preferences to the interests of shareholders. This view is premised on two assumptions that are no longer true: first, the idea that all shareholders want to maximize the net present value of the firm's earnings per dollar invested; and, second, the view that microeconomic shocks do not produce macroeconomic consequences. The rise of institutional investors undermines the first assumption, since large asset managers hold the entire market and have been shown to display a preference for maximizing the value of their portfolio as a whole, with limited interest in the performance of specific companies: that is, they are "portfolio value maximizers." At the same time, the increasingly interconnectedness of the economy, and society more broadly, undermines the second assumption, as there is ample empirical evidence demonstrating that microeconomic shocks can propagate through the existing interconnections and generate catastrophic consequences. We also show how a subset of firms, those "central" to the network of interconnections that comprises the economy, is responsible for those shocks. We argue that corporate law should reflect these features of contemporary economies, and hence change its fundamental purpose. On the one hand, it should aim to ensure that non-central firms maximize their own value, despite the rise of portfolio value maximizers. On the other hand, in central firms it should harness the preferences of portfolio-value-maximizing shareholders with the goal of minimizing the risk of catastrophic externalities like climate change or financial crises. We develop a framework to guide policymakers in the pursuit of this new fundamental conception of corporate law and provide concrete examples of how changes in the rules on dual class shares, tenure voting, and ownership disclosure could account for these changes.

INTRODUCTION

Two secular trends are shaking the foundations of corporate law. On the one hand, reconcentration of share ownership in the hands of institutional investors is a *fait accompli*. The three largest among them, BlackRock, Vanguard, and State Street (now known as "the Big

(*) Professor of Corporate Law, University of Oxford and ECGI Fellow.

(**) Assistant Professor Bocconi Law School. We are grateful to Ron Gilson for the fruitful discussions and the numerous comments on earlier drafts, and Henry Hansmann, Kenneth Khoo, Sebastián Guidi and other participants to the Bocconi Corporate Law Workshop for helpful comments. Giulia Ballerini, Margherita Corrado and Georgios Pantelias provided excellent research assistance. Usual disclaimers apply.

Three”), manage over US\$16 trillion of assets,¹ and are together the largest owners at 88% of the S&P500 companies.² Corporations have entered the age of institutional ownership. On the other hand, we live in an increasingly interconnected world in which the actions of firms and individuals can have catastrophic externalities. The largest current and looming threats to our society, namely the COVID-19 pandemic,³ climate change,⁴ and financial and macroeconomic crises,⁵ are all instances in which interconnections among actors are key as local dynamics can propagate across the whole system.⁶

¹ BlackRock manages roughly \$7.5 trillion of assets, see BLACKROCK, INC., ANNUAL REPORT (FORM 10-K) 4 (Feb. 28, 2020), State Street \$3.16 trillion, see STATE STREET, CORP., ANNUAL REPORT (FORM 10-K) 4 (Feb. 20, 2020), whereas Vanguard manages \$6.2 trillion, see *Fast Facts about Vanguard*, VANGUARD, <https://about.vanguard.com/who-we-are/fast-facts/> (last visited Jan. 24, 2021).

² See Jan Fichtner, Eelke M. Heemskerk & 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, 298 (2017).

³ As of January 2021, COVID-19 had already caused over 2 million deaths around the globe. See *Coronavirus Resource Center*, JOHN HOPKINS UNIV. (last visited Jan. 24, 2021). Moreover, it is projected to cause a drop of 4% of the global GDP. See Maryla Maliszewska, Aaditya Mattoo & Dominique Van Der Mensbrugge, *The Potential Impact of COVID-19 on GDP and Trade: A Preliminary Assessment* 17 (World Bank Pol’y Res. Working Paper No. 9211, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3573211 (last updated Apr. 30, 2020).

⁴ The economic consequences of climate change are estimated to be catastrophic. According to the Cambridge Center for Risk Studies, absent significant mitigation strategies, climate change could impose losses to the global economy of \$19 trillion over a five-year period. See SCOTT KELLY ET AL., UNHEDGEABLE RISK: HOW CLIMATE CHANGE SENTIMENT IMPACTS INVESTMENT 3 (2015), <https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/crs-unhedgeable-risk.pdf>. Most importantly, as noted by a Special Report by the Intergovernmental Panel on Climate Change, not all losses caused by climate change can be monetized. Many of the consequences of climate change, as loss of human lives, cultural heritage and ecosystem services, cannot easily be translated into monetary terms, and hence are not captured by most estimates. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, GLOBAL WARMING OF 1.5° C, 11 n. 10 (2018), https://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf.

⁵ Only in the United States, the 2007-2009 financial crisis caused losses for \$4.6 trillion, or 15% of the GDP. To put it differently, it cost on average \$70,000 to every single American. Besides its catastrophic economic impact, the crisis also had important political consequences. See Gautam Mukunda, *The Social and Political Costs of the Financial Crisis, 10 Years Later*, HARV. BUS. REV. (Sep. 25, 2018), <https://hbr.org/2018/09/the-social-and-political-costs-of-the-financial-crisis-10-years-later>.

⁶ While human-driven climate change is a signature of our time, pandemics and financial crises have long existed. However, the speed at which pandemics and financial crises propagate at a global scale is unprecedented and in large part attributable to the fact that the world is increasingly interconnected. As noted by Professor Ian Goldin,

“The spread of coronavirus around the world is alarming, but not surprising. Globalisation creates systemic risks. As trade, finance, travel, cyber and other networks grow in scale and interact, they become more complex and unstable ... The super-spreaders of the goods of globalisation, such as major airport hubs, are also super-spreaders of the bads. The 2008 global financial crisis provided a dramatic example of how contagion could spread from the US to global markets overnight.”

Ian Goldin, *Coronavirus Shows How Globalisation Spreads Contagion of All Kinds*, FIN. TIMES (Mar. 3, 2020),

In this article, we suggest that corporate law should be fundamentally rethought as a result of these two trends. Traditionally, the core goal of corporate law has been to align managers' preferences to the interests of shareholders.⁷ Instead, we argue that corporate law should now be focused on a different goal: ensuring that firms maximize their own value, *while minimizing the risk of catastrophic externalities*.

The traditional view is built on the idea that shareholders are "firm value maximizing" (FVM),⁸ but lack the information set and the knowledge required to achieve their goal without managers' help.⁹ At the same time, managers have been assumed not only to have superior information and knowledge but also to be aiming at maximizing their own payoffs instead of focusing on firm value maximization. Therefore, managers might act opportunistically by, for example, investing in pet projects or diverting value from the firm to their own pockets. Furthermore, the traditional view has been that, "as a consequence of both logic and experience. . . the best means to. . . [maximize aggregate social welfare] is to make corporate managers strongly accountable to shareholder interests and, at least in direct terms, *only* to those interests."¹⁰ Within that framework, the goal of corporate law is straightforward: aligning managers' preferences to those of shareholders. This view can be reframed as follows: shareholders have a single well-defined objective, namely "to maximize the net present value of the firm's earnings per dollar invested."¹¹ Managing companies in the interest of shareholders that seek to maximize the net present value of their firm leads to a higher level of social welfare than any realistically available alternative; hence, the goal of corporate law is to align managers' preferences to the goal of shareholders.

This defense of firm value maximization is tightly intertwined with the view, dating back to Robert Lucas, that shocks hitting a firm or a sector are unlikely to have more than

<https://www.ft.com/content/70300682-5d33-11ea-ac5e-df00963c20e6>. See also IAN GOLDIN & MIKE MARIATHASAN, *THE BUTTERFLY DEFECT: HOW GLOBALIZATION CREATES SYSTEMIC RISKS, AND WHAT TO DO ABOUT IT* *passim* (2015) (providing numerous examples of systemic risks caused by increasing interdependence in the contemporary world).

⁷ See REINIER KRAAKMAN ET AL., *THE ANATOMY OF CORPORATE LAW* 22-24 (3d ed. 2017).

⁸ See Milton Friedman, *A Friedman Doctrine - The Social Responsibility of Business Is to Increase Its Profits*, N.Y. TIMES MAG., 32, 33 (Sept. 13, 1970) (arguing that generally the goal of a company's shareholders "will be to make as much money as possible while conforming to the basic rules of the society"). This view has also long been endorsed by courts. See e.g. *Dodge v. Ford Motor Co.*, 170 N.W. 668, 684 (Mich. 1919):

A business corporation is organized and carried on primarily for the profit of the stockholders. The powers of the directors are to be employed for that end. The discretion of directors is to be exercised in the choice of means to attain that end, and does not extend to a change in the end itself, to the reduction of profits, or to the nondistribution of profits among stockholders in order to devote them to other purposes.

⁹ See generally Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305 (1976) (providing an agency theory account of corporate governance).

¹⁰ Henry Hansmann & Reinier Kraakman, *The End of History for Corporate Law*, 89 GEO. L.J. 439, 441 (2000) (emphasis added).

¹¹ Henry Hansmann, *Ownership of the Firm*, 4 J. L. ECON. & ORG. 267, 283 (1988).

negligible macroeconomic consequences, because they will be diversified away.¹² Against this background, the idea of firms maximizing their own value seems reasonable. While it is widely acknowledged that firms can cause externalities, these are presumed to be contained at the micro level and can hence be internalized via tort law or regulations, however imperfect these may be.¹³ Moreover, the externalities that cannot be internalized are perceived to be an acceptable price to pay for engendering aggressive competition among firms attempting to maximize their own value.

To summarize, the traditional view is premised on two fundamental assumptions: (i) events at the micro level do not have systemic consequences; and (ii) shareholders are firm value maximizers. The two aforementioned secular trends undermine both assumptions.

First, a robust literature has shown that local dynamics can have important consequences at an aggregate level, both for the economy and for the environment.¹⁴ In an interconnected economy in which the distribution of firms is fat-tailed (that is, where a few large firms coexist with many small firms), idiosyncratic shocks hitting single firms or sectors can cause macroeconomic fluctuations.¹⁵ Similarly, the emissions of a few outsized major carbon emitters propagate in the atmosphere and have a significant impact on climate change at the global level.¹⁶

Second, to reap the benefits of diversification, institutional investors own significant stakes in a wide array of companies. At the most general level, this implies that the goal of most shareholders is no longer to maximize the present value of each firm separately, but rather to maximize the aggregate value of their portfolio. Many papers show that institutional investors in fact account for inter-firm spillovers and hence do not act as firm value maximizers.¹⁷ In other words, present-day shareholders are predominantly “portfolio value maximizing” (PVM) shareholders. To be sure, we do not claim that institutional investors *never* act consistently with each individual portfolio firm’s goal of maximizing its own value.¹⁸ Yet, there

¹² See Vasco M. Carvalho, *From Micro to Macro via Production Networks*, 28 J. ECON. PERSP. 23, 25 (2014) (summarizing the traditional account offered by Lucas). For the original formulation see Robert E. Lucas, Jr., *Understanding Business Cycles*, (1978) reprinted in *ESSENTIAL READINGS IN ECONOMICS* 306, 318 (Saul Estrin & Alan Martin eds. 1995) (arguing that “in a complex modern economy, there will be a large number of such shifts in any given period, each small in importance relative to total output. There will be much ‘averaging out’ of such effects across markets”).

¹³ Stephen M. Bainbridge, *In Defense of The Shareholder Wealth Maximization Norm: A Reply to Professor Green*, 50 WASH. & LEE L. REV. 1423 (1993) (noting that there is a variety of mechanisms to induce shareholders to internalize the negative externalities they create).

¹⁴ See *infra* section III.D.

¹⁵ See *infra* notes 129-145 and accompanying text.

¹⁶ See *infra* notes 146-149 and accompanying text.

¹⁷ See *infra* section II.A.

¹⁸ To begin with, a strategy that is optimal to maximize the value of a firm often also maximizes portfolio value. Second, navigating the interdependencies among portfolio firms can be a complex and costly endeavor: thus, identifying PVM firm-level strategies that deviate from the firm value maximization goal might not always

is robust evidence that they do at times act as portfolio value maximizers,¹⁹ and it stands to reason that individual companies are more likely now than in the past to deviate from firm value maximization, under the influence of ever larger PVM shareholders. As the reconcentration of shares in the hands of a few massive institutions is relentlessly proceeding, and as shares are increasingly moving to portfolios that replicate the market,²⁰ institutional investors can be expected to more and more often have (and express) PVM preferences.

But why does it matter that institutional investors increasingly act as PVM shareholders? Consider the case of climate change, arguably the biggest challenge currently faced by humanity. Market economies might appear not to be suited to mitigate its effects. As leading policymakers have suggested, firms that exclusively focus on maximizing shareholder value have limited incentives to address issues that cause significant externalities,²¹ particularly given that shareholders are shielded by limited liability.²² In fact, a firm that reduces its carbon emissions will bear the full cost of this strategy but only internalize a minimal fraction of the positive externality with respect to the environment. Therefore, firms that focus purely on maximizing their own value will have an excessively high level of carbon emissions.

The large diversified institutional investors that dominate today's corporate landscape, such as the Big Three, arguably have different preferences. They hold significant stakes in virtually every firm in the economies of a number of countries on behalf of hundreds of thousands of beneficial owners.²³ They would thus seem to be the ideal conduits for the

be possible or worth the effort. Third, some institutional investors have weak incentives to engage with individual portfolio companies and may often just act as passive shareholders: unless managers have sufficient incentives to spontaneously pursue PVM strategies, they may then stick to FVM ones. Last but not least, some institutional investors do actively manage their portfolios and try to pick "winners" which they expect to do better than the market as a whole and their industry peers. Interdependencies among the subset of firms they invest in may well have trivial effects on portfolio performance.

¹⁹ See *infra* section II.A.

²⁰ See Lucian Bebchuk & Scott Hirst, *The Specter of the Giant Three*, 99 B. U. L. REV. 721, 723 (2019) (noting that "[o]ver the last decade, more than 80% of all assets flowing into investment funds has gone to the Big Three, and the proportion of total funds flowing to the Big Three has been rising through the second half of the decade" and concluding that "the Big Three will likely continue to grow into a 'Giant Three,' and that the Giant Three will likely come to dominate voting in public companies").

²¹ See Andrew Ross Sorkin et al., *Democratic Senators Prepare to 'Fundamentally Reform' Capitalism*, N.Y. TIMES (Oct. 30 2020), <https://www.nytimes.com/2020/10/30/business/dealbook/democrats-warren-capitalism.html> ("Short-term financial pressure often pushes corporations to forgo necessary long-term investments, ignore the threat of climate change and concentrate opportunity in ways that exclude too many of our communities,' . . . senators [Tammy Baldwin, Tom Carper, Mark Warner and Elizabeth Warren] said in a statement. 'We will work together on ways we can fundamentally reform corporate governance in America.'").

²² See Henry Hansmann & Reinier Kraakman, *Toward Unlimited Shareholder Liability for Corporate Torts*, 100 YALE L. J. 1879, 1932 (1991) (arguing that limited liability allows "substantial externalization of costs").

²³ BlackRock alone is the largest shareholder of one third of FTSE 100 companies and a top-five shareholder in 89 of them, see Martin C. Schmalz, *Common-Ownership Concentration and Corporate Conduct* 10 ANN. REV. FIN. ECON. 413, 417 (2018), and in 2019 it cast votes at 16,124 meetings around the globe, see BLACKROCK, 2019 INVESTMENT STEWARDSHIP ANNUAL REPORT 24 (2019), <https://www.blackrock.com/corporate/literature/publication/blk-annual-stewardship-report-2019.pdf>.

internalization of a large fraction of the negative externalities caused by carbon emissions. In other words, large institutional investors are less concerned than undiversified shareholders with the performance of individual portfolio companies, and more interested in the state of whole economies. Consequently, their preferences might be closer to those of society at large when it comes to pertinent questions such as how much CO₂ companies should emit.²⁴ Intriguingly, there is evidence that large institutions have pushed competing firms to reduce carbon emissions,²⁵ and even that their efforts have been successful in changing the behavior of portfolio companies in this direction.²⁶ This raises the following question: is the rise of PVM shareholders going to help save the world from climate change and other similar threats to our lives and livelihoods?

Most would probably answer this question with a resounding “no.”²⁷ For instance, a number of leading scholars have been vocal in suggesting that, if left unchecked, institutional investors’ preferences could lead to socially harmful outcomes:²⁸ institutional investors that own shares in horizontal competitors might have a stronger interest than a non-diversified shareholder in reducing the level of competition among those firms so as to maximize the joint value of their portfolio assets at the industry level. In turn, anticompetitive behavior of this kind would have negative consequences ranging from hindering economic growth to

²⁴ See Madison Condon, *Externalities and the Common Owner*, 95 WASH. L. REV. 1, 17-18 (2020) (arguing that “[f]or indexers and quasi-indexers whose investment strategy is to match the market. . . this ability to influence the market beta itself is unprecedented. This uniqueness can explain why institutional investors have taken on the role of proactive overseers of management and undertaken many of the climate-related corporate engagements discussed in the following section,” *id.* at 18).

²⁵ See Gillian Tett, *In the Vanguard: Fund giants urge CEOs to be ‘Force for Good’*, FIN. TIMES (1 Feb. 2018), https://cecp.co/wp-content/uploads/2018/02/FT_Investor_Letter_2.1.18.pdf.

²⁶ See José Azar et al., *The Big Three and Corporate Carbon Emissions Around the World*, J. FIN. ECON. (forthcoming) (“we observe a strong and robust negative association between Big Three ownership and subsequent carbon emissions among MSCI index constituents, a pattern that becomes stronger in the later years of the sample period as the three institutions publicly commit to tackle ESG issues”). See also Alexander Dyck et al., *Do Institutional Investors Drive Corporate Social Responsibility? International Evidence*, 131 J. FIN. ECON. 639 (2019) (“We find that greater institutional ownership is associated with higher firm-level E&S scores. Not only is this result statistically significant, but it is also economically meaningful”); Condon, *supra* note 24 at 1 (describing how a coalition of institutional investors persuaded Royal Dutch Shell to embark in a massive program to reduce its net carbon footprint that had been defined by the CEO “cumbersome and onerous”).

²⁷ See e.g. Giovanni Strampelli, *Can BlackRock Save the Planet? The Institutional Investors’ role in Stakeholders Capitalism*, HARV. BUS. L. REV. (forthcoming) (“it is illusory to assume that institutional investors can be charged with the task of pursuing objectives of general interest, such as fighting climate change (thus essentially acting in place of the state), where such a task is not aligned with their clients’ and their own interest in improving risk-adjusted returns”).

²⁸ See e.g. Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267 (2016); Eric A. Posner, Fiona M. Scott-Morton & E. Glen Weyl, *A Proposal to Limit the Anti-Competitive Power of Institutional Investors*, 81 ANTITRUST L. J. 669 (2017); Fiona M. Scott-Morton & Herbert J. Hovenkamp, *Horizontal Shareholding and Antitrust Policy*, 127 YALE L. J. 2026 (2018) (all of them analyzing the ways in which horizontal shareholding provides powerful incentives to engage in anticompetitive behavior).

increasing income and wealth inequality.²⁹ From this perspective, perhaps the question should instead be: are institutional investors going to destroy our economies?

The answers to these questions may depend on how corporate law evolves in response to the fact that the assumptions on which it was grounded are no longer true. In this article, we suggest that corporate law should react by moving beyond the traditional one-size-fits-all rules in favor of a two-pronged system. For a subset of firms, namely those that can produce significant externalities at the aggregate level, corporate law should be structured in a way that enhances the voice of PVM shareholders. For all other firms, it should be structured in a way that preserves the voice of FVM shareholders. We illustrate how policies can be structured to achieve these goals by focusing on rules on dual class shares, tenure voting, and ownership disclosure. Our two-pronged approach would allow policymakers to get the best of both worlds. In firms that cause systemic externalities, PVM shareholders would be able to constrain the preferences of FVM shareholders that are oblivious to them. In all other cases, PVM shareholders would have less power to weaken competition among FVM firms.

One possible objection to our framework is that corporate governance and corporate law are not the right tools to address catastrophic externalities, and that it should be the job of policymakers to deal with these issues. However, we are not suggesting that PVM shareholders should be *the*, let alone *the only*, bastion against climate change and similar threats. Rather, we argue that both PVM shareholders and policymakers may and should, respectively, do their part.³⁰ PVM shareholders may be part of the solution because in many instances they will have better information than policymakers on the best possible course of action for their portfolio companies, and hence might be able to identify the most effective and least intrusive ways to contain the risk of catastrophic externalities. At the same time, many of the catastrophic threats described are characterized by interjurisdictional externalities, that is, they entail externalities that cross country borders.³¹ Consequently, policymakers have suboptimal incentives to take action.³² Admittedly, PVM shareholders are themselves likely to have suboptimal incentives, as they are mostly concerned with negative spillovers hitting their portfolio firms and will be oblivious to externalities that affect final consumers and non-listed companies that are not in their portfolios. Hence, we can also view PVM shareholders and policymakers as complements: the former will (partially) account also for interjurisdictional externalities, whereas the latter will (partially) account also for externalities that affect final consumers and non-listed companies.

²⁹ See Elhauge *supra* note 28, at 1281-1301.

³⁰ The Nobel Prize economist Elinor Ostrom emphasized the importance of having a polycentric approach to climate change, in which public and private actors play a role. See Elinor Ostrom, *Nested Externalities and Polycentric Institutions: Must We Wait for Global Solutions to Climate Change Before Taking Actions at Other Scales?*, 49 *ECON. THEORY* 353 (2012).

³¹ See Mariana Pargendler, *The Rise of International Corporate Law* 4 (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3728650.

³² *Id.*

This Article is organized as follows. In Part I, we discuss the rise of institutional ownership and the core characteristics of mutual funds and hedge funds. Part II reviews the empirical evidence showing that institutional investors do, at least at times, act as portfolio value maximizers. Part III explores the pros and cons of having corporations pursuing firm value maximization, contrasting it with a world in which their management is under the influence of PVM shareholders. We explain how, while the preferences of FVM shareholders might be more aligned with social preferences in most instances, PVM shareholders become important when firms can cause systemic externalities such as those at the root of climate change and financial crises. We also show that there is a subset of well-defined central firms that create disproportionately large systemic externalities and conclude that the voice of FVM shareholders should be amplified for all non-central firms, whereas more voice should be given to PVM shareholders in central firms. In Part IV, we illustrate how corporate law could be reshaped to achieve this dual goal by providing three examples of policies that could be differentiated for central and non-central firms, namely those relating to dual class shares, tenure voting, and ownership disclosure rules. Finally, Part V discusses a possible extension of our framework to the case of COVID-19, while Part VI concludes.

I. DO PORTFOLIO-VALUE-MAXIMIZING INSTITUTIONAL SHAREHOLDERS MATTER?

Institutional investors act as portfolio value maximizers in their interactions with investee companies when they direct them, whether by voting or otherwise exercising their influence, to internalize inter-firm externalities. Following this definition, Table 1 shows that corporate conduct can be consistent with the maximization of: (a) both portfolio and firm value (which, for want of a better word, we call “optimal” conducts, with the qualification that we are talking about private optimality rather than social optimality³³); (b) one or the other; or (c) neither.

Table 1: Possible conducts from the perspective of FVM and PVM shareholders

	Conducts of a given portfolio company maximize the value of that company		
		No	Yes
Conducts of a given portfolio company maximize the value of a wider portfolio	No	Wasteful conducts	FVM-only conducts
	Yes	PVM-only conducts	“Optimal” conducts

Intuitively, the interests of FVM and PVM shareholders are aligned most of the time. More precisely, for both wasteful and optimal conducts, FVM and PVM shareholders’

³³ See *infra*, text preceding notes 74-75.

preferences are the same. For instance, both FVM and PVM shareholders would dislike a wasteful project that diverts resources from a portfolio company to its management or an acquisition that is motivated by managerial hubris. Similarly, a merger that increases the value of the companies involved is likely to be in the best interests of both PVM and FVM shareholders. Yet, the rise of institutional ownership raises the question of whether there are instances in which institutional investors prefer, support and obtain the implementation of individual company strategies that maximize the value of their portfolio but not the individual company's value (PVM-only conducts). This part sets the scene by introducing the relevant players (institutional investors), while Part II reviews the empirical literature shedding light on PVM-only conducts.

Institutional investors can be defined as businesses specializing in the management of other people's money by investing it in securities and other asset classes.³⁴ While their products come in many forms, including insurance policies and banks' trust services, the most common legal structure for institutional investing implies a separation between the asset manager and the investors' funds, which are pooled into separate legal entities known as investment funds.³⁵ Given the dominance of this legal form on the market, we focus our attention on investment funds and their asset managers, starting with a description of their mechanics.

The asset manager and the fund stipulate a contract under which the management company provides the personnel and services that are necessary to run the fund and retains full authority to manage it.³⁶ The asset manager then raises capital by selling fund shares to investors.³⁷ The funds thus raised are then invested in securities and other assets, with the funds usually paying a fee for the management and other services rendered by the asset managers.

This structure creates a dual agency relationship.³⁸ On the one hand, institutional investors are agents of the investors who buy shares of their funds, owing them (or, formally, each of the funds they manage) fiduciary duties,³⁹ including the duty to maximize the funds' returns according to the risk profile identified in the management contract and disclosed to

³⁴ See Amil Dasgupta, Vyacheslav Fos & Zacharias Sautner, *Institutional Investors and Corporate Governance* 4-5 (European Corp. Governance Institute, Working Paper No. 700, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3682800.

³⁵ See John Morley, *The Separation of Funds and Managers: A Theory of Investment Fund Structure and Regulation*, 123 YALE L. J. 1228, 1238-1240 (2013).

³⁶ Morley, *supra* note 35 at 1239.

³⁷ *Id.*

³⁸ See Ronald J. Gilson & Jeffrey N. Gordon, *The Agency Costs of Agency Capitalism: Activist Investors and The Reevaluation of Governance Rights*, 113 COLUM. L. REV. 863, 874-888 (2013) (describing the dual agency relationship characterizing asset managers).

³⁹ See John D. Morley, *Too Big to Be Activist*, 92 S. CAL. L. REV. 1407, 1417 (2019) ("Like a lawyer who represents multiple clients at the same time, an investment manager has a fiduciary responsibility-rooted in the laws of agency, trusts, corporations, and contract-to serve the interests of each client individually without sacrificing the interests of that client for the benefit of any other.").

potential investors.⁴⁰ On the other, as shareholders of their portfolio companies, institutional investors are principals of the managers of such companies⁴¹ and, given their prominence, may have an influence on how companies are run.

Investment funds have different management styles. The fundamental distinction is between passively and actively managed funds. The former merely track indexes,⁴² while active asset managers attempt to identify which companies will outperform the market and thus invest significant resources in gathering information about them.⁴³

Among actively managed funds, some are regulated as mutual funds and some are not. Mutual funds issue securities to all sorts of investors, including retail, and for that reason need to register with the Securities and Exchange Commission (SEC) and comply with the Investment Company Act (ICA) of 1940, which provides *inter alia* for minimal diversification rules and regulates how asset managers can be compensated for their services.⁴⁴ Instead, hedge funds only issue securities to institutional investors and sophisticated individuals, and hence are subject to much lighter regulation, including on diversification and compensation.⁴⁵

The differences in management style (active vs. passive funds) and regulation (mutual vs. hedge funds) affect institutions' inclination to focus on firm versus portfolio value maximization. At one extreme, an institution exclusively managing passive funds will be virtually indifferent to the performance of *individual* companies in its portfolio. Pursuant to its business model, it does not chase alpha but rather beta by holding a portfolio replicating the entire market.⁴⁶ Yet, with revenues coming in the form of management fees (however small)

⁴⁰ See Max M Schanzenbach & Robert H. Sitkoff, *Reconciling Fiduciary Duty and Social Conscience: The Law and Economics of ESG Investing by a Trustee*, 72 STAN. L. REV. 381, 400-403 (2020) (discussing the fiduciary duty of asset managers).

⁴¹ In some cases, for instance when pension funds buy fund shares, the agency relationship can even become multi-layered. Dasgupta, Fos & Sautner, *supra* note 34 at 38.

⁴² Passive funds do not attempt to outperform the market, but merely to match its performance. The main advantages of this investment strategy are that it minimizes trading costs and tax liability. See John C. Coffee, *The Future of Disclosure: ESG, Common Ownership, and Systematic Risk* 3 n. 6 (European Corporate Governance Institute-Law Working Paper, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3678197.

⁴³ As noted by Kenneth French, active funds are unlikely to outperform passive funds, see Kenneth French, *Presidential Address, The Cost of Active Investing*, 63 J. FIN. 1537, 1561 (2008). In fact, more and more assets are migrating towards passive funds, and in 2019 for the first time the funds tracking broad U.S. equity indexes had more assets by value than stock-picking rivals, see Dawn Lin, *Index Funds Are the New Kings of Wall Street*, WALL ST. J. (Sept. 18, 2019), <https://www.wsj.com/articles/index-funds-are-the-new-kings-of-wall-street-11568799004>.

⁴⁴ Investment Companies Act of 1940 15 U.S.C. §80a-5(b)(1) and §80a-35(b) (2018).

⁴⁵ Title IV of the Dodd-Frank Act defines as "private funds" the funds that are exempted from registration under the Investment Company Act 1940 because they offer their securities to qualifying clients only. Hedge funds and private equity funds usually fall under this definition. Hedge fund managers enjoy more flexibility with respect to the assets they invest in and can take short positions, borrow, and use exotic derivatives. See generally Rene M. Stulz, *Hedge Funds: Past, Present, and Future*, 21 J. ECON. PERSP. 175, 177 (2007). See also Lucian A. Bebchuk, Alma Cohen & Scott Hirst, *The Agency Problems of Institutional Investors*, 31 J. ECON. PERSP., 89, 104 (2017).

⁴⁶ On the capital asset pricing model and the distinction between alpha and beta see for example André F. Perold, *The Capital Asset Pricing Model*, 18 J. ECON. PERSP. 3, 14 (2004).

calculated on assets under management⁴⁷ and from stock lending,⁴⁸ an asset manager will still have an interest in the market as a whole providing returns on their clients' investment. Without returns, clients may reduce investment,⁴⁹ leading to lower management (and other services) fees and having fewer shares to lend.⁵⁰ In other words, a wholly passive manager does care about portfolio value maximization. At the same time, however, a similar institution will be rationally reticent, that is, have weak incentives to actively influence portfolio companies in order to improve its funds' performance, because competing passive fund managers will equally gain from such effort.⁵¹ Note that rational reticence should prevent passive fund managers from engaging with individual companies not only to improve these companies' performance (which would in any case be inconsistent with their beta-focused management style) but also to induce them to internalize externalities, especially where quantifying the inter-firm effects of such externalities across their portfolios requires significant investment in information gathering and processing.⁵²

⁴⁷ See John Morley & Quinn Curtis, *Taking Exit Rights Seriously: Why Governance and Fee Litigation Don't Work in Mutual Funds*, 120 YALE L. J. 84, 92, 98-99 (2010) (explaining fund advisors' compensation).

⁴⁸ See Edwin Hu, Joshua Mitts & Haley Sylvester, *Index-Fund Governance: An Empirical Study of the Lending-Voting Tradeoff*, 1 n.5 (N. Y. U. L. Econ. Res. Paper No. 20-52, 2020), <https://ssrn.com/abstract=3673531> (detailing how institutional investors draw significant revenues from lending shares).

⁴⁹ See Jill Fisch, Assaf Hamdani & Steven Davidoff Solomon, *The New Titans of Wall Street: A Theoretical Framework for Passive Investors*, 168 U. PA. L. REV. 17, 32 (2019) (noting that passive funds are competing with other forms of investments to attract capital, and hence are interested in the performance of their portfolio); see also Bernard S. Black, *Agents Watching Agents: The Promise of Institutional Investor Voice*, 39 UCLA L. REV. 811, 879-81 (1992) (making a similar point).

⁵⁰ With management fees down to close to zero due to competition (if not zero: see Ryan Vlastelica, *Fidelity Announces Zero-Fee Funds, in a Big Milestone for the Industry*, MARKETWATCH (Aug. 1, 2018, 5:23 PM), <https://www.marketwatch.com/story/fund-fees-hit-milestone-as-fidelity-announces-products-charging-0-2018-08-01>) (discussing Fidelity's zero-fee funds), stock lending is one of the main sources of revenues for managers of passive funds, see Hu, Mitts & Sylvester, *supra* note 48 at 7. See also Lucian A. Bebchuk & Scott Hirst, *Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy*, 119 COLUM. L. REV. 2029, 2054-2055 ("The average expense ratios for the Big Three—the combined fees and expenses that they receive for their services as a percentage of assets under management—are 0.30%, 0.09%, and 0.17% for BlackRock, Vanguard, and SSGA, respectively, and the fee percentages are even lower as these figures also include expenses.").

⁵¹ See Gilson & Gordon, *supra* note 38, at 867.

⁵² Cf. Anna Christie, *The Agency Costs of Sustainable Capitalism: Responsible Activists, Index Investors, and the Big Three* 54-62 (2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3766478, and Jeffrey N. Gordon, *Systematic Stewardship* 32-33 (unpublished manuscript, on file with the authors) (both acknowledging the rational reticence problem in this setting but arguing that passive funds may respond to climate-focused activists' campaigns and get informed). So long as there are climate change activists stirring waters, it can lead to responsive voice. Still, as Gordon notes (*id.* at 32), this would not work for externalities arising from excessive risk-taking by systemically important financial institutions. Cf. also Luca Enriques & Alessandro Romano, *Institutional Investor Voting Behavior: A Network Theory Perspective*, 2019 University of Illinois Law Review 223 (arguing that network dynamics among employees of institutional investors may lead to more informed voting than the rational reticence model predicts).

In turn, a hypothetical institution only managing active mutual funds, when these are not closet passive funds,⁵³ picks a subset of the shares available on the market and is therefore overweighted in its portfolio companies. It also earns a management fee calculated on its funds' portfolio size, that is generally higher than the fee charged by passive mutual funds.⁵⁴ In the long run, its ability to attract client funds will depend, at least in part, on beating the market. Hence, such an institution will indeed care about the performance of individual companies in its portfolio and may even have sufficient incentives to influence their performance. Yet, the regulatory requirements against excessive concentration of holdings in individual companies limits the institution's ability to be overweighted on an individual stock. In addition, its fiduciary duty is to maximize the value of a fund's portfolio.⁵⁵ Therefore, it may well figure out how inter-firm spillovers among investee companies affect portfolio returns. With this in mind, institutions such as these are not necessarily firm value maximizers either. While they are unlikely to be systematically in favor of strategies that maximize the returns of the stock market as a whole, they may well be overweighted in the shares of companies within an individual industry and care about maximizing such companies' *joint* returns.

A similar logic appears to apply to institutions specializing in hedge fund management, because they have no regulatory limits on concentrating bets on individual companies and charge fees that both have higher sensitivity to their portfolio's performance and that are higher than those typically charged by active funds.⁵⁶ As a consequence, hedge fund managers, even if they are much smaller than mutual fund managers, play a disproportionately large role in corporate governance,⁵⁷ especially those that engage with portfolio companies in oft-adversarial activist campaigns aimed at forcing changes in strategy, governance, or both. Importantly, in order to win their campaigns, activist hedge funds must push for strategies that a sufficient number of active and passive mutual fund managers will find consistent with their interests and duties.⁵⁸

Table 2 summarizes these considerations.

⁵³ Closet index funds are funds marketed as actively managed funds but replicating the composition of entire markets or segments thereof. See K.J. Martijn Cremers & Quinn Curtis, *Do Mutual Fund Investors Get What They Pay For? Securities Law and Closet Index Funds*, 11 VA. L. & BUS. REV. 31, 46-67 (2016) (finding that twelve percent of mutual fund assets can be categorized as closet index funds).

⁵⁴ See INV. CO. INST., 2018 INVESTMENT COMPANY FACT BOOK 126 (58th ed. 2018) (showing that index funds have a much lower average expense ratio than active equity funds).

⁵⁵ See Schanzenbach & Sitkoff *supra* note 40 at 400-403.

⁵⁶ See William Fung & David A. Hsieh, *A Primer on Hedge Funds*, 6 J. EMPIRICAL FIN. 309, 310 (1999).

⁵⁷ See Dasgupta, Fos & Sautner, *supra* note 34 at 7 ("[A]ctivist hedge funds . . . have wielded a disproportionate influence on corporate governance in the recent two decades.").

⁵⁸ Gilson & Gordon, *supra* note 38, at 897 (noting that in many instances hedge funds can be successful only if they persuade enough mutual funds to support their campaign).

Table 2: Different kinds of institutional investors

	Revenues	Percentage of assets invested in each portfolio company	Preference for market-wide PVM policies	Incentives to engage with individual companies
Hedge Funds	High fees aligned to investors	High	Low	High
Active Mutual Funds	Medium fees, weakly aligned to investors	Medium	Medium	Medium
Passive Mutual Funds	Low (if not zero) fees, stock lending fees	Low	High	Low

Most institutions do not fully specialize in one form of asset management or another. The largest institutional investors manage families of passive as well as active mutual funds; some of them have departments managing hedge funds too. For example, BlackRock has \$4.9 trillion in passive funds, \$1.9 trillion in active funds,⁵⁹ and \$38 billion in hedge funds.⁶⁰ Because of the economies of scale in the passive management business though, smaller institutions are unlikely to also offer passive funds.

Given this market structure, and although institutional investors should act as maximizers of returns of each separate portfolio within the fund family, their actions qua shareholders in portfolio companies may be the outcome of interactions among individual employees or departments within institutions (and across them),⁶¹ which may lead to swaying passively managed funds' voting behavior in the direction of FVM strategies or, conversely, to making actively managed funds more sensitive to market-wide issues than their portfolios would warrant. Yet, we are unaware of empirical evidence documenting whether information flows among staff members in charge of different kinds of funds within a single institutional investor exist. Similarly, we are unaware of evidence on whether institutions' internal arrangements on how to vote fund family portfolio shares lead to more or less PVM as opposed

⁵⁹ See BLACKROCK, INC., *supra* note 1 at 4.

⁶⁰ See BLACKROCK, INC., WHY BLACKROCK FOR HEDGE FUNDS, <https://www.blackrock.com/institutions/en-us/strategies/alternatives/hedge-funds#blackrock-team> (last visited Jan. 24, 2021).

⁶¹ See Luca Enriques & Alessandro Romano, *Institutional Investor Voting Behavior: A Network Theory Perspective*, 2019 U. ILL. L. REV. 223, 243-54 (outlining the network effects across institutional investors that can lead to more coordination among them than standard economics would predict).

to FVM voting behavior.⁶² For instance, as BlackRock's actively managed funds, with their higher margins, account for about half of BlackRock's profits,⁶³ we would expect that voting behavior in portfolio firms would be less concerned with issues having a market-wide impact than might be suggested from a quick look at the assets under passive management.⁶⁴

To complicate things further, estimating inter-firm spillovers can be a very complex endeavor, especially for institutional investors that hold stakes in thousands of corporations. Consequently, in many instances, an institutional investor may not know in which quadrant of Table 1 a given conduct will fall. Similarly, the distinction between a company's FVM strategies and PVM ones is not always clear, especially to anyone outside the firm: it is perfectly plausible that a PVM institution supports FVM-only strategies because it mistakenly perceives them as purely PVM or as both PVM and FVM.

To conclude, all institutional investors are required by law to act as portfolio value maximizers at the level of each individual fund, but a number of factors will interact in determining (1) whether that will in fact be the case and, additionally, (2) to what extent their PVM preferences may translate into portfolio companies' strategies and their subsequent conduct being consistent with such strategies. These are empirical questions that a burgeoning literature on institutional investors' role in corporate governance and on "common ownership," (*i.e.*, the phenomenon where firms have shareholders with significant stakes in common) is trying to answer.

⁶² On information sharing across "large fund families," see Michelle Lowry & Peter Iliev, *Are Mutual Funds Active Voters?*, 28 REV. FIN. STUD. 446, 455 (2015) ("funds that are part of large families (defined as being in a family with above-median total net assets) are categorized as having high net benefits of active voting. Large families can spread the costs of collecting information, resulting in high net benefits of voting."). See also Fisch, Hamdani & Solomon, *supra* note 49, at 42-43:

[P]assive fund sponsors are aided in all these efforts by the fact that their product mixture typically includes active and passive funds. This mixture, which most commentators have ignored, creates efficient cross-subsidization due to the differing expertise of active and passive funds ... It is common for fund sponsors to coordinate the engagement and voting activities of their active and passive funds through a centralized governance or stewardship committee, a measure designed, at many fund families, to increase information flow between active and passive funds. This enables the efforts of passive and active funds within the same fund family to be complementary.

⁶³ See Chris Flood, *BlackRock's Rivers of Gold from Active Management*, FIN. TIMES (Oct. 14, 2017), <https://www.ft.com/content/f62ed0c2-ada1-11e7-beba-5521c713abf4> (reporting that the "fees from active management matched the \$1.33bn in base fees generated in the third quarter by the far larger \$3.9tn combined pool of ETF and index assets").

⁶⁴ We are also unaware of studies on compensation practices for buy-side analysts and governance and stewardship officers at giant institutions, which could similarly affect their behavior as firm or portfolio value maximizers.

II. INSTITUTIONAL SHAREHOLDERS' INFLUENCE AS PORTFOLIO VALUE MAXIMIZERS

That institutional owners influence companies is old news.⁶⁵ In this article, however, we are concerned with a narrower claim. Namely, that institutional investors sometimes induce their portfolio firms to internalize inter-firm externalities. The next section describes the empirical evidence in support of this claim. An important disclaimer here is that in practice the distinction between PVM and FVM behavior is not always clear-cut, and hence some of the empirical evidence presented could be (mis)interpreted as one or the other.

A. Empirical Evidence

Figure 1 summarizes the main areas in which there is evidence suggesting that institutional investors with stakes in multiple companies might be inducing their portfolio companies to internalize part of the externalities produced by their activity.

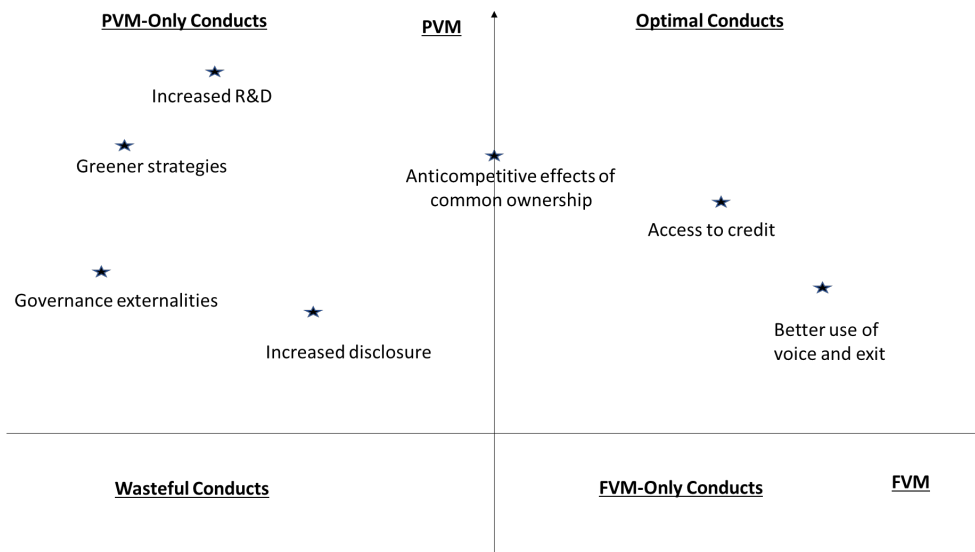


Figure 1: A summary of the empirical evidence that common ownership affects corporate strategies across many dimensions

⁶⁵ See e.g. Ian R. Appel, Todd A. Gormley & Donald B. Kim, *Passive Investors, Not Passive Owners*. 121 J. FIN. ECON. 111, 134 (2016) (finding that “ownership by passively managed mutual funds is associated with more independent directors on a board, fewer takeover defenses, and more equal voting right”); Alan D. Crane, Sébastien Michenaud, & James P. Weston, *The Effect Of Institutional Ownership On Payout Policy: Evidence From Index Thresholds*, 29 REV. FIN. STUD. 1377 (2016) (showing that “higher institutional ownership causes firms to pay more dividends”); Philippe Aghion, John Van Reenen & Luigi Zingales, *Innovation and Institutional Ownership*, 103 AM. ECON. REV. 277, 277 (2013) (finding that “greater institutional ownership is associated with more innovation”); see also Andrew Bird & Stephen A. Karolyi 2016, *Do Institutional Investors Demand Public Disclosure?*, 29 REV. FIN. STUD. 3245 (2016) (finding that an increase in institutional ownership is associated with Form 8K filings that are longer and contain more graphical information); Mozaffar Khan, Suraj Srinivasan & Liang Tan, *Institutional Ownership and Corporate Tax Avoidance: New Evidence*, 92 ACCT. REV. 101 (2017) (finding that higher institutional ownership is associated with more tax avoidance).

The most debated manifestation of corporate-level conduct consistent with institutional investors' PVM preferences is the anticompetitive effects of common ownership. In virtually all oligopolistic markets, large institutional investors own significant stakes in the main horizontal competitors. In order to maximize the aggregate value of their stakes in the horizontal competitors, they may prefer a lower level of competition in some of these markets. In a seminal paper, Azar, Schmalz, and Tecu showed that this relationship held in the airline industry, as higher values of common ownership are associated with prices at the route level that are 3 to 7 percent higher than what they would be without common ownership.⁶⁶ Other papers have found similar results in other markets. For instance, Torshizi and Clapp found that horizontal shareholding significantly contributed to the increase in soy, corn and cotton seed prices,⁶⁷ while a study by Azar, Raina, and Schmalz suggested that common ownership might be lowering the level of competition in retail banking.⁶⁸ Additionally, a study prepared for the European Commission found that the merger between BlackRock and another institutional investor – which resulted in an increase in common ownership – enhanced its market power in the beverage industry.⁶⁹ Similarly, Xie and Gerakos found that common ownership affects competition between branded and generic drugs.⁷⁰ Looking at the issue from a different angle,

⁶⁶ See José Azar, Martin C. Schmalz & Isabel Tecu, *Anticompetitive Effects of Common Ownership*, 73 J. FIN. 1513, *passim* (2018). Their seminal paper spurred an intense debate. Two empirical papers questioned their results. See Patrick Dennis, Kristopher Gerardi & Carola Schenone, *Common Ownership Does Not Have Anti-Competitive Effects in the Airline Industry* 5 (2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3063465 (finding “little evidence” of a positive correlation between ticket prices and common ownership in the airline industry) and Pauline Kennedy et al., *The Competitive Effects of Common Ownership: Economic Foundations And Empirical Evidence* 4 (2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3008331 (“In contrast to AST, we find no evidence in our price regressions and structural model estimation that common ownership raises prices”). The authors of the original studies reacted to these criticisms by defending their findings. See José, Azar, Martin C. Schmalz & Isabel Tecu, *Reply to: ‘Common Ownership Does Not Have Anti-Competitive Effects in the Airline Industry’* (2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3168095; José Azar, Martin Schmalz & Isabel Tecu, *Research on the Competitive Consequences of Common Ownership: A Methodological Critique*, 66 ANTITRUST BULL. 1 (2021).

⁶⁷ Mohammad Torshizi & Jennifer Clapp, *Price Effects of Common Ownership in the Seed Sector*, 66 ANTITRUST L. BULL. 1, 3 (2021).

⁶⁸ José Azar, Sahil Raina & Martin C. Schmalz, *Ultimate Ownership and Bank Competition*, (2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2710252 (finding that common ownership affects interest rates, maintenance fees, and fee thresholds). *But see also* Jacob Gramlich, & Serafin Grundl, *Estimating The Competitive Effects Of Common Ownership* 2 (FEDS Working Paper No. 2017-029, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2940137 (proposing an alternative methodology to measure common ownership and finding that the impact of common ownership on price and quantities depends on the specification of the model and is “fairly small”).

⁶⁹ See Nicoletta Rosati et al., *Common Shareholding in Europe* 167-204 (EUR 30312 EN, Publications Office of the European Union, JRC121476, Luxembourg, 2020).

⁷⁰ Jin Xie & Joseph Gerakos, *The Anticompetitive Effects of Common Ownership: The Case of Paragraph IV Generic Entry*, 110 AM. ECON. ASS. PAPERS & PROC. 569 (2020).

meanwhile, Anton and coauthors suggested that horizontal shareholding could lead to compensation packages that give top executives weaker incentives to compete.⁷¹

These studies suggest that at least in some instances and some markets, institutional investors might prefer a lower level of competition among firms in their portfolios because aggressively competitive behavior on the part of one of their portfolio firms would negatively affect other firms in their portfolio.⁷² In other words, competition outcomes in such markets appear to be consistent with the preferences of portfolio value maximizers.

Yet, this debate also highlights how it is often impossible for an outside observer to discriminate between instances in which shareholders are acting as portfolio value maximizers, and instances in which they are acting as firm value maximizers. To illustrate why, let us accept the evidence suggesting that common ownership leads to lower competition as conclusive.

On the one hand, each of the firms may *independently* prefer a lower level of competition, in which case common ownership is merely a way to facilitate coordination. This puts a weak competition strategy in the (privately) “optimal conduct” quadrant of Table 1, that is, the preferred one in terms of both firm value maximization and portfolio value maximization.⁷³ Importantly, as hinted at in Part I, this conduct is optimal merely from the perspective of the firms’ shareholders, but it is not socially optimal. In fact, a low level of competition is generally associated with welfare losses.⁷⁴

On the other hand, suppose that one particularly strong and innovative firm within the relevant industry would be able to maximize its own value by competing aggressively.⁷⁵ Its

⁷¹ See Miguel Antón, Florian Ederer, Mireia Gine & Martin C. Schmalz, *Common Ownership, Competition, and Top Management Incentives* (Ross School of Bus. Working Paper No. 1328, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2802332. *But see infra* note 114 for references to works criticizing their result.

⁷² Even two of the staunchest opponents of the idea that common ownership can lead to anticompetitive effects conceded that in some instances common shareholders can facilitate coordination among competitors. See Edward B. Rock & Daniel L. Rubinfeld, *Common Ownership and Coordinated Effects*, 83 ANTITRUST L.J. 201, 201 (2020) (discussing cases in which coordinated anticompetitive effects from common ownership are “plausible”).

⁷³ For the sake of simplicity, we have not included the possibility of inter-market spillovers in this simplified example. If the negative inter-market spillovers that are associated with a lower level of competition are sufficiently large, it might be that a lower level of competition is in the interest of FVM shareholders, but not of PVM shareholders. See Alessandro Romano, *Horizontal Shareholding and Network Theory*, 38 YALE J. REG. 363 (2020).

⁷⁴ See *supra* text preceding note 33.

⁷⁵ Cf. Schmalz, *supra* note 23, at 414, describing some examples of FVM shareholders:

“Richard Branson was until recently the largest shareholder of Virgin America, Warren Buffett controls Berkshire Hathaway, Jeff Bezos is by far the largest shareholder of Amazon, and the Walton family controls Walmart. If these firms act in their largest shareholders’ financial interest, they should indeed maximize their own value—and disregard the impact their actions may have on other firms’ bottom lines. For example, Walmart and Amazon can increase their value by competing aggressively against rivals. The basis for this intuition is that the largest

PVM shareholders might still prefer a lower level of competition in order to benefit all of their portfolio companies operating in the market. If they were to prevail, the firm's conduct would be situated in the PVM-only quadrant. For an external observer, however, it may be virtually impossible to distinguish between these two cases. Therefore, Figure 1 indicates that the anticompetitive effects of common ownership can equally be the result of pursuing the preferences of both PVM shareholders as much as of pursuing the preferences of both FVM shareholders.

Ownership by large and diversified institutional investors also leads firms to internalize more externalities related to the environment. Dyck and coauthors found that higher levels of institutional ownership lead firms to have higher environmental and social (E&S) scores.⁷⁶ More specifically, they found that this result was not driven by the fact that institutional investors are investing in firms with good E&S scores.⁷⁷ Instead, they stated that "investors convey their preferences for improved E&S by engaging with firms they already own."⁷⁸ According to the authors: "successful engagements are predominantly private, with public pressure such as shareholder proposals used only occasionally to increase leverage in institutions' private negotiations."⁷⁹

In a similar vein, Azar and coauthors found a strong negative association between Big Three ownership and carbon emissions.⁸⁰ Moreover, this association strengthened recently when the three institutions publicly affirmed their intention to address environmental issues.⁸¹ To be sure, in some instances an FVM shareholder might also profit if the company reduces its carbon footprint. But if an increased presence of the Big Three—which implies a lower presence of less diversified shareholders—results in lower carbon emissions, then it is reasonable to assume that this additional reduction is due to concerns associated with the negative externalities caused by such emissions. Anecdotal evidence also supports this interpretation. For instance, the CEO of Royal Dutch Shell initially opposed a project to reduce the net carbon footprint of the company by 35% by 2035, and by 50% by 2050, calling it "onerous and cumbersome."⁸² After pressure from a coalition of institutional investors controlling US\$34 trillion of assets under management, Royal Dutch Shell capitulated and agreed to this ambitious plan.⁸³ Here, the friction between an FVM approach and a PVM approach is apparent. The CEO of Royal Dutch Shell at first objected to the

shareholders do not also have significant holdings in other firms, and that holdings in other firms by diversified minority shareholders (e.g., BlackRock and Vanguard) have no significant influence on corporate strategy."

⁷⁶ Alexander Dyck, Karl V. Lins, Lukas Roth & Hannes F. Wagner, *Do Institutional Investors Drive Corporate Social Responsibility? International Evidence*, 131 J. FIN ECON. 639 (2019).

⁷⁷ *Id.* at 694.

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ Azar et al., *supra* note 26, at 31.

⁸¹ *Id.*

⁸² Sarah Kent, *Shell to Link Carbon Emissions Targets to Executive Pay*, WALL ST. J. (Dec. 3, 2018), <https://www.wsj.com/articles/shell-to-link-carbon-emissions-targets-to-executives-pay-1543843441>.

⁸³ See Condon, *supra* note 24 at 1, 20-21.

plan because his company could only appropriate a minimal fraction of the benefits associated with a reduction in its carbon footprint. But widely diversified investors could internalize a much larger portion of the positive externalities via their other portfolio companies, and hence supported the plan.

To further support this interpretation, in his annual letter to CEOs, BlackRock Chairman and CEO Larry Fink affirmed that climate change is “a defining factor in companies’ long-term prospects”⁸⁴ and that “climate risk is compelling investors to reassess core assumptions about modern finance,”⁸⁵ thus suggesting that tackling climate change will be a core issue for BlackRock.⁸⁶ Similarly, in his 2020 letter to BlackRock’s clients, Fink argued that sustainability should be BlackRock’s new standard for investing and explained possible strategies to place sustainability at the center of its business model.⁸⁷

BlackRock is not alone here. Krueger, Sautner and Starks surveyed leading institutional investors and found that 32% of them proposed specific actions to manage climate risk issues, that 30% submitted shareholder proposals related to climate risk, and that 30% voted against management on proposals related to climate risk.⁸⁸ This evidence, combined with the fact that ESG considerations are increasingly becoming a crucial determinant of the investment strategies of institutional investors,⁸⁹ suggests that institutional investors are using a variety of mechanisms to pressure their portfolio companies to account for climate risk.

⁸⁴ Laurence D. Fink, *A Fundamental Reshaping of Finance* (2020), <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>.

⁸⁵ *Id.*

⁸⁶ Similar words have been pronounced by leading figures at the remaining Big Three. See e.g. STATE STREET, TACKLING CLIMATE CHANGE RISK: A CONVERSATION WITH RON O’HANLEY AND MIKE BLOOMBERG (2019), <https://www.statestreet.com/ideas/articles/ohanley-bloomberg-climate-change.html> (featuring Ron O’Hanley, State Street’s CEO, explaining that climate change is a key factor in State Street’s investment strategies); Ross Kerber & Sinead Cruise, *Exclusive: Vanguard Names Names and Backs Some Calls for Climate Steps*, REUTERS (Jun. 18, 2020), <https://www.reuters.com/article/us-climatechange-vanguard-exclusive/exclusive-vanguard-names-names-and-backs-some-calls-for-climate-steps-idINKBN23P1T1> (paraphrasing the statements of Vanguard principal, Glenn Booraem, contending that companies and businesses should account for the risks posed by climate change).

⁸⁷ See Laurence D. Fink, *Sustainability as BlackRock’s New Standard for Investing* (2020), <https://www.blackrock.com/corporate/investor-relations/blackrock-client-letter>. But see Lucca De Paoli & Alastair Marsh, *BlackRock, Vanguard Show Little Favor for Shareholder ESG Votes* BLOOMBERG (Dec. 1, 2020), <https://www.bloomberg.com/news/articles/2020-12-01/blackrock-vanguard-show-little-favor-for-shareholder-esg-votes?ref=7iliGpFt> (showing that BlackRock and Vanguard rarely vote in support of ESG proposals). One problem with relying on voting data, however, is that large institutional investors often influence their portfolio companies by engaging with them ‘behind the scenes’, instead of relying only on votes. See Joseph A. McCahery, Zacharias Sautner & Laura T. Starks, *Behind the Scenes: The Corporate Governance Preferences of Institutional Investors*, 71 J. FIN. 2905 (2016).

⁸⁸ See Philipp Krueger, Zacharias Sautner & Laura T. Starks, *The Importance of Climate Risks for Institutional Investors*, 33 REV. FIN. STUD. 1067, 1071 (2020).

⁸⁹ See Schanzenbach & Sitkoff, *supra* note 40, at 387 (reporting that “[a]s of November 2019, over 1,900 asset managers have signed the [Principles for Responsible Investment]’s statement of principles on ESG investing,

Notably, not all institutional investors are pushing in the same direction. There is empirical evidence that hedge funds consider high corporate social responsibility (CSR) scores as a sign of wasteful behavior. Hence, firms with a higher level of CSR are more likely to become a target of activist campaigns.⁹⁰ This is consistent with the idea that it is large and diversified portfolio value maximizers that are driving the internalization of climate externalities, whereas less diversified FVM shareholders can have opposing goals.

This evidence suggests that green strategies pursued by diversified institutional investors reflect their role as PVM shareholders and can be included in the PVM-only quadrant of Table 1.

Common ownership also influences firms' attitudes toward innovation. In a seminal paper, Bloom, Schankerman, and John Van Reenen found that the (gross) social rate of return to R&D exceeded the private return by a very large margin (34.3%).⁹¹ As a consequence, companies might have incentives to underinvest in innovation, given that they can only capture part of the returns on their investments. However, when investors also own shares in the competitors, suppliers and customers of the firm carrying out the innovation, they will be able to internalize a larger fraction of the positive externalities. In turn, this should imply that higher levels of common ownership lead to greater innovation. Both theoretical and empirical studies support this conclusion.⁹² Furthermore, empirical evidence also supports the idea that common ownership facilitates the diffusion of innovation among firms.⁹³ Once again, more innovation can also be positive from the perspective of FVM shareholders. However, these papers suggest that common ownership leads to *additional* investment in R&D, which in turn

including many of the world's leading institutional investors"); Jennifer G Hill, *The Conundrum of Common Ownership*, 53 VAND. J. TRANSNAT'L L. 881, 904-905 (2020) (discussing how the growing importance of ESG considerations for large institutional investors might affect the debate on common ownership); Julia M. Puauschunder, & Martin Gelter, *COVID-19 and Comparative Corporate Governance*, J. CORP L. 48-63 (forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3772965&dgcid=ejournal_html_email_corporate:law:corporate:governance:law:ejournal_abstractlink.

⁹⁰ See Mark R DesJardine, Emilio Marti & Rodolphe Durand, *Why Activist Hedge Funds Target Socially Responsible Firms: The Reaction Costs of Signaling Corporate Social Responsibility*, ACADEMY OF MANAGEMENT J. (forthcoming, 2020).

⁹¹ See Nicholas Bloom, Mark Schankerman & John Van Reenen, *Identifying Technology Spillovers and Product Market Rivalry*, 81 ECONOMETRICA 1347, 1384 (2013).

⁹² See Ángel L. López & Xavier Vives, *Overlapping Ownership, R&D Spillovers, and Antitrust Policy*, 127 J. POL. ECON. 2394 (2019) (showing under which conditions overlapping ownership can lead to higher R&D and to higher social welfare); see also Miguel Anton et al., *Innovation: The Bright Side of Common Ownership?* (2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3099578 (finding evidence that in certain instances common ownership leads to more innovation); Paul Borochin, Jie Yang & Rongrong Zhang, *Common Ownership Types and Their Effects on Innovation and Competition* 4 (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3204767 (finding that "[h]igher common ownership by 'dedicated', or focused and long-horizon, financial institutions promotes innovation"); and Kaijuan Gao, Hanxiao Shen, Xi Gao & Kam C. Chan, *The power of sharing: Evidence from institutional investor cross-ownership and corporate innovation*, 63 INT'L REV. ECON. FIN. 284 (2019) (finding that cross-ownership affects innovation in China).

⁹³ Leonard Kostovetsky & Alberto Manconi, *Common Institutional Ownership and Diffusion of Innovation* 5 (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3204767 (finding that common owners can be a vehicle for the diffusion of innovation).

suggests that the effect is driven by the possibility for common owners to internalize a larger portion of the positive externalities associated with innovation. Hence, pro-innovation strategies can also be included in the PVM-only quadrant of Table 1.

A similar logic can be applied to the finding that common ownership positively affects voluntary disclosure. It is well established in the empirical literature that disclosure by one firm produces spillovers onto other firms in the industry in terms of costs of capital and liquidity.⁹⁴ Common ownership allows investors to internalize part of these spillovers and therefore leads firms to disclose more.⁹⁵ The direction of causality – from common ownership to voluntary disclosure – reveals that portfolio firms account for the preferences of their PVM shareholders.

Additionally, common ownership influences the extent to which firms monitor management. In an influential paper, Acharya and Volpin showed that firms competing for talent in the managerial labor market might reach an equilibrium in which governance quality is inefficiently low.⁹⁶ The basic intuition is that firms have two main channels to reduce managerial agency problems: (i) setting a high level of compensation; and (ii) strengthening governance. A firm that invests heavily in governance will have fewer resources to compensate managers and therefore might lose out in the competition for managerial talent against firms that underinvest in governance. The result is that firms will underinvest in governance because they do not internalize the benefits that a high investment in governance generates for competitors.⁹⁷ Recent research shows that common ownership ameliorates this issue. Common owners partially internalize this externality and hence prefer close monitoring of their portfolio companies' managers.⁹⁸

Last, Shekita documented in detail 30 instances in which common owners engaged with their portfolio companies with the goal of altering their conduct, and showed that some

⁹⁴ See Anat R. Admati & Paul Pfleiderer, *Forcing Firms to Talk: Financial Disclosure Regulation and Externalities*, 13 REV. FIN. STUD. 479, 480 (2000) (noting that firms only internalize a fraction of the social value of the information they disclose).

⁹⁵ See Jihwon Park et al., *Disclosure Incentives When Competing Firms Have Common Ownership*, 67 J. ACCOUNTING ECON. 387 (2019) (providing empirical evidence for the finding that “common ownership is positively associated with the likelihood and frequency of issuing earnings and capex forecasts,” *id* at 389). Cf. Roberta Romano, *Empowering Investors: A Market Approach to Securities Regulation*, 107 YALE L.J. 2359, 2368 (1998) (“[Investors] will desire a regime requiring the information’s disclosure because, by definition of a positive externality, the expected gain on their shares in competitors will offset the loss on their shares in the issuer.”). *But see* Andrea Pawliczek, A. Nicole Skinner & Sarah L.C. Zechman, *Facilitating Tacit Collusion: A New Perspective On Common Ownership and Voluntary Disclosure* (2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3382324 (suggesting that an alternative and more cynical explanation for the relationship between common ownership and increased disclosure is that more disclosure facilitates tacit collusion).

⁹⁶ See Viral V. Acharya & Paolo F. Volpin, *Corporate Governance Externalities*, 14 REV. FIN. 1 (2010).

⁹⁷ *Id.*

⁹⁸ See Jie Jack He, Jiekun Huang & Shan Zhao, *Internalizing Governance Externalities: The Role of Institutional Cross-Ownership*, 134 J. FIN. ECON. 400 (2019).

instances also involved product and pricing.⁹⁹ For instance, he described a meeting organized by leading institutional investors like T. Rowe Price and Fidelity in which several top executives of the pharmaceutical industry were pushed to better “defend their pricing.”¹⁰⁰

Common ownership also affects firms’ conduct on a wide array of other behaviors that are consistent with the preferences of both PVM and FVM shareholders. For example, a theoretical model by Edmans, Levit, and Reilly shows that common ownership leads institutional shareholders to use both voice and exit more effectively.¹⁰¹ Moreover, common ownership also improves coordination among firms by facilitating within-industry joint-ventures and alliances¹⁰² and increases the chances of two firms merging.¹⁰³ Furthermore, common ownership across suppliers and customers leads to more innovative collaboration, greater inventory management efficiency, and more financial cooperation.¹⁰⁴ Finally, common ownership facilitates access to credit. In fact, Ojeda found that an increase in common ownership leads to a decrease in interest rate and an increase in loan size, and that this effect is larger for smaller firms.¹⁰⁵

⁹⁹ See Nathan Shekita, *Interventions by Common Owners* (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3658726.

¹⁰⁰ *Id.* at 5.

¹⁰¹ See Alex Edmans, Doron Levit & Devin Reilly, *Governance Under Common Ownership*, 32 REV. FIN. STUD. 2673 (2019). For empirical evidence confirming the model’s predictions see Kang Jun-Koo, Juan Luo & Hyun Seung Na, *Are Institutional Investors with Multiple Blockholdings Effective Monitors?*, 128 J. FIN. ECON. 576, 577-578 (2018) (finding that multiple blockholdings facilitate effective institutional monitoring and increase firm value and investigating).

¹⁰² See Jie Jack He & Jiekun Huang, *Product Market Competition in a World of Cross-Ownership: Evidence from Institutional Blockholdings*, 30 REV. FIN. STUD. 2674 (2017) (providing explanations for the proposition that common ownership “improve[s] the level and efficiency of collaboration between same-industry firms beyond what these firms can achieve on their own,” *id.* at 2676).

¹⁰³ See Chris Brooks, Zhong Chen & Yeqin Zeng, *Institutional Cross-Ownership and Corporate Strategy: The Case of Mergers and Acquisitions*, 48 J. CORP. FIN. 187 (2018) (providing evidence for the proposition that “the presence of institutional cross-ownership between two firms increases the probability of a merger pair formation,” *id.* at 189).

¹⁰⁴ Kayla Freeman, *The Effects of Common Ownership on Customer-Supplier Relationships* (Kelley School Bus. Res. Paper No. 16-84, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2873199.

¹⁰⁵ Waldo Ojeda, *Common Ownership in The Loan Market*, (2018), <https://waldotekampa.me/files/JMP.pdf>. See also Jie He, Lantian Yang, Hui Wang & Hang Xia, *Networking Behind the Scenes: Institutional Cross-industry Holdings and Information Frictions in Corporate Loans* (2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3486597 (finding that common ownership by institutional investors reduces informational frictions between banks and portfolio firms, which reduces borrowing costs); Gjergji Cici, Scott Gibson & Claire M. Rosenfeld, *Cross-Company Effects of Common Ownership: Dealings Between Borrowers and Lenders with a Common Blockholder*, (2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2705856 (finding that borrowers are significantly more likely to enter into repeat interactions with a lender when an institutional investor is a blockholder in both companies and that this result is driven by instances in which the common owner is an active investor).

While this literature mostly refers to conducts that are in line with the preferences of both FVM and PVM shareholders, and hence do not belong to the PVM-only quadrant in Table 1, they provide additional evidence that diversified investors can influence firms' conduct.

Our brief overview of the literature on common ownership reveals that we are beyond the point at which one could reasonably doubt whether institutional investors act as portfolio value maximizers and affect the way companies are managed. At least in some instances, common ownership leads firms to internalize spillovers.

B. *The Debate on the Mechanisms*

One important question is how institutional investors can induce portfolio firms to adopt conducts that are in line with PVM preferences.

Looking for a one-size-fits-all answer would be the wrong way to proceed here. Thus, to begin with, different institutional investors must adopt different strategies to influence their portfolio firms, depending on their characteristics. For example, index funds cannot "exit" because they are locked in their investment.¹⁰⁶ Therefore, they have to rely on voting,¹⁰⁷ public statements about their preferences¹⁰⁸, and behind-the-scenes interventions.¹⁰⁹ At the other extreme, hedge funds generally adopt much more aggressive strategies like proxy contests.¹¹⁰

Another fundamental difference is that some PVM conducts are socially harmful, if not plainly illegal, whereas others are perceived as desirable by the public. Consider the difference between promoting anticompetitive conducts and incentivizing portfolio firms to lower their emissions. Pressuring managers into coordinating their actions with competitors with the aim of reducing competition is illegal. Hence, any mechanism connecting common ownership with anticompetitive behaviors by portfolio firms must be invisible or, at least, undetectable. Promoting green strategies, instead, is a perfectly legitimate goal and pursuing these is likely

¹⁰⁶ See Suren Gomtsian, *Voting Engagement by Large Institutional Investors*, 45 J. CORP. L. 659, 676 (2020) (noting that index funds 'abandon' their exit rights when they chose to mimic market indexes).

¹⁰⁷ See Appel et al. *supra* note 65 (showing that institutional investors influence their portfolio companies through voting).

¹⁰⁸ See *supra* notes 84-87 and accompanying text.

¹⁰⁹ See McCahery, Sautner & Starks, *supra* note 87. See also Shenje Hshieh, Jiasun Li & Yingcong Tang, *How Do Passive Funds Act as Active Owners? Evidence from Mutual Fund Voting Records*, J. CORP. FIN. (forthcoming) (providing suggestive evidence that behind-the-scenes intervention is more likely in firms in which passive funds hold larger stakes).

¹¹⁰ See Marcel Kahan & Edward B. Rock, *Hedge Funds in Corporate Governance and Corporate Control*, 155 U. PA. L. REV. 1021 (2007) (describing the role played by hedge funds in corporate governance).

to improve the reputation of the PVM shareholders.¹¹¹ Thus, in this case, the mechanism chosen is likely to be as visible as possible.¹¹²

Against this background, it is unsurprising that less information is available on the mechanisms behind the alleged connection between common ownership and a lower level of competition in product markets than on how institutional investors try to induce their portfolio companies to account for climate risk.

With respect to the anticompetitive effects of common ownership, Anton et al. found that compensation schemes of firms' executives operating in markets characterized by higher levels of common ownership give less weight to relative performance indicators.¹¹³ Such compensation arrangements would give executives weaker incentives to engage in aggressive competition. However, both theoretical and empirical papers have since questioned this finding.¹¹⁴

Other scholars have suggested that firms' executives that want to maximize the chance of being re-elected spontaneously account for the preferences of their common owners and, hence, for the externalities that an aggressive competitive strategy would impose on their shareholders' other portfolio firms.¹¹⁵ Last, some have suggested that for common owners it is sufficient not to pressure their portfolio firms into competing to produce anticompetitive effects.¹¹⁶ However, these hypotheses are not immune from criticism and remain very hard, if not impossible, to prove or disprove.¹¹⁷ Thus, whether there is an effective mechanism that

¹¹¹ See Michal Barzuza, Quinn Curtis & David H. Webber, *Shareholder Value (s): Index Fund Activism and the New Millennial Corporate Governance*, 93 S. CAL. L. REV. (forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3439516.

¹¹² See Marcel Kahan & Edward B. Rock, *Index Funds and Corporate Governance: Let Shareholders be Shareholders*, 100 B.U.L. REV. 1771, 1798 (2020) ("Given the historical suspicion of concentrated economic power in the United States, BlackRock's CEO must worry about the prospect of regulation. The best way to avoid regulation is to be viewed by relevant audiences as a responsible steward." (citations omitted)).

¹¹³ See Antón et al., *supra* note 71.

¹¹⁴ See e.g. David I. Walker, *Common Ownership and Executive Incentives: The Implausibility of Compensation as an Anticompetitive Mechanism*, 99 B.U.L. REV. 2373 (2019) (arguing, *inter alia*, that the largest institutional investors explicitly endorsed relative performance indicators, hence playing an active role in their diffusion); and Heung Jin Kwon, *Executive Compensation Under Common Ownership*, (Department Econ., U. Chi. 2016) <http://www.fmaconferences.org/Boston/ExecutiveCompensationUnderCommonOwnership.pdf> (finding that common ownership leads to compensation arrangements that increase the incentives to compete).

¹¹⁵ See Einer Elhauge, *The Causal Mechanism of Horizontal Shareholding*, 82 OHIO ST. L.J. (forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3370675.

¹¹⁶ See José Azar & Martin C. Schmalz, *Common Ownership of Competitors Raises Antitrust Concerns*, 8 J. EUR. COMPETITION L. & PRAC. 329, 330 (2017) (arguing that "antitrust risks persist even when funds remained perfectly passive with respect to corporate governance other than voting their shares").

¹¹⁷ See generally Alessandro Romano, *Horizontal Shareholding and Network Theory*, 38 YALE J. REG. 363, 379-381 (2020) (critically reviewing the debate on the mechanisms pertaining to explain the anticompetitive effects of common ownership).

allows common owners to influence competition in product markets is an open question that is unlikely to ever be answered in a compelling manner.

On the contrary, there is plenty of evidence of institutional investors attempting to induce their portfolio companies to account for considerations related to climate change. In fact, not only is it the case that there are no legal reasons to conceal these efforts, but it is also intuitive that there are actually good reasons to overstate them: a green reputation can help attract capital.¹¹⁸

III. FIRM VERSUS PORTFOLIO VALUE MAXIMIZATION IN AN INTERCONNECTED WORLD

In this part, we present the traditional arguments in favor of firm value maximization and against portfolio value maximization. Based on these arguments, we suggest that it is generally desirable to enhance the voice of FVM shareholders, but with one important exception. As we argue, the voice of PVM shareholders is especially important for a specific subset of firms, namely those that can be expected to affect the entire economy (and beyond) with their behavior, be they major carbon emitters, systemically important financial institutions, or firms with a central place in an interconnected economy.

A. *The Virtues of Firm Value Maximization*

Any microeconomic textbook starts with formal proof that social welfare is maximized when firms compete against each other to maximize their own value.¹¹⁹ This is well captured by the following famous quote from Adam Smith: “it is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest.”¹²⁰ Ultimately, in an attempt to increase their own wealth, economic agents produce valuable outputs.

In principle, this argument applies equally well to a local bakery as it would to a modern corporation that produces artificial intelligence software. Because the owner of the bakery and

¹¹⁸ See generally Barzuza, Curtis & Webber, *supra* note 111 at 108 (“[I]n response to pressure from their millennials’ employees and consumers, managers across firms conform in advancing social goals,” such as environmental ones). See also Christie, *supra* note 52, at 26-28, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3766478 (arguing that institutional investors have incentives to be rationally hypocritical and to overstate their efforts to promote green strategies in their portfolio companies).

¹¹⁹ This is captured by the fundamental theorems of welfare economics. The first theorem states that under certain assumptions “the competitive economy is always Pareto efficient”. The second theorem states that “every Pareto efficient allocation can be attained through the price system.” See Joseph E. Stiglitz, E, *The Invisible Hand and Modern Welfare Economics*, 2-3 (Nat’l Bureau of Econ. Rsch., Working Paper No. 3641, 1991), <https://www.nber.org/papers/w3641>. For the original formulation of the theorems see Kenneth J. Arrow, *An Extension of the Basic Theorems of Classical Welfare Economics*, PROCEEDINGS OF THE SECOND BERKELEY SYMPOSIUM (1951).

¹²⁰ See ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 19 (Penn State Electronic Classics Series 2005) (1776).

the shareholders of the corporation want to maximize the value of their investment,¹²¹ they will attempt to ensure that their company realizes good products that meet consumer demand.¹²² As a result, society enjoys both good bread and advanced artificial intelligence software.

One key advantage of having competition among self-interested businesses is that it allows society to exploit the disaggregated information held by many economic agents. As noted by Hayek: “the economic problem of society is mainly one of rapid adaptation to changes in the particular circumstances of time and place.”¹²³ Of course, no one knows better than the baker or the corporation how to constantly adapt their products to fluctuating circumstances with the resources available to them.¹²⁴ Admittedly, decentralized decision-making is also plagued with problems,¹²⁵ and hence some degree of centralization, in the form of collective decision-making of one kind or the other, is generally required. However, a centralized decision-maker would have neither more accurate knowledge nor better incentives to plan a complex economy. Hence, competition among FVM firms that harvest disaggregated information seems the best available mechanism to increase social welfare.

But imagine that all bakeries in a city are owned by the same investor (the “common owner”).¹²⁶ The common owner will now have incentives to maximize the aggregate profits of all the bakeries, instead of pushing each one of them to maximize their own profits by competing aggressively. As a result, competition among bakeries will weaken, prices will increase, and there might be less product innovation. Moreover, the common owner will not have detailed information on the tastes and preferences of people in different neighborhoods, so they might not be able to quickly adapt to the changing circumstances in the different parts of the city and innovate accordingly. Moreover, while the common owner will be interested in maximizing the value of all bakeries, they will not have an interest in maximizing value for customers, their employees or firms that operate in different sectors.

¹²¹ The new orthodoxy is to view organizations as entities with a multitude of stakeholders, ideally coordinating to maximize their aggregate welfare as such. For the purposes of our paper, we do not think it is essential to dig into the question of whether *firm* value maximization is merely about shareholder welfare maximization or comprises the welfare of other constituencies and, especially, what the consequences of this approach would be for our core claims. That is because the multistakeholder model is, practically speaking, incapable of reaching its goals. See Ronald J. Gilson & Curtis J. Milhaupt, *Shifting Influences on Corporate Governance: Capital Market Completeness and Policy Channeling* (2020), https://scholarship.law.columbia.edu/faculty_scholarship/2705/.

¹²² To be sure, as Smith himself preconized (SMITH, *supra* note 120 at 606-07), corporations are not as effective as individuals at pursuing their shareholders’ welfare, due to the necessary intermediation of agents (the directors) with their own conflicting interests and the imperfect tools available to align them to those of shareholders. That is what much of corporate governance and law are about.

¹²³ Friedrich A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519, 524 (1945).

¹²⁴ *Id.*

¹²⁵ An obvious example is the famous tragedy of the commons. See Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244 (1968) (explaining that individuals will deplete resources that are open to everyone).

¹²⁶ A similar example is introduced also in Elhauge, *supra* note 28, at 1269.

This simplified example captures the three main issues associated with the emergence of gigantic and diversified institutional investors. First, when they own stakes in horizontal competitors, they might have an interest in lowering competition in the given market. Second, a single institution with thousands of portfolio companies might have limited knowledge about their specific characteristics,¹²⁷ and hence might support inefficient one-size-fits-all solutions. Third, despite being widely diversified, institutional investors only have stakes in one subset of the economy. Thus, they do not internalize the losses imposed on non-portfolio companies, final consumers, and others.

When considering the specific features of institutional investors, there is an additional issue that further complicates things: asset managers' compensation depends quite loosely on the returns of their beneficiaries, and hence they are unlikely to have interests that are aligned to those of their beneficiaries.¹²⁸

For these reasons, as a general rule, FVM shareholders should play a key role: their voice should be preserved in the face of the growing power of PVM shareholders.

B. When Enhancing the Role of PVM Shareholders is Desirable

Firm value maximization implicitly rests on the standard idea that a firm-level shock is unlikely to result in macroeconomic consequences. Firms can cause externalities, but these are presumed to be contained at the local level and hence can be internalized, for the most part, via tort law. Moreover, the externalities that cannot be internalized are perceived as an acceptable price to pay for having aggressive competition among firms attempting to maximize their own value. When these conditions hold, firm value maximization is justifiable.

On the contrary, when the externalities produced by a small subset of firms can have a catastrophically large macroeconomic impact, a pure FVM approach poses significant problems. This has already been acknowledged in the case of systemically important financial institutions (SIFIs). SIFIs are too big and too interconnected to fail, since their default endangers the entire economy.¹²⁹ Therefore, policymakers must bail out SIFIs whenever they are in distress.¹³⁰ This creates moral hazard. As SIFI insiders know that governments will cover at least part of their losses in the event that many risky investments turn out badly, they have

¹²⁷ For a theoretical discussion see Dorothy S. Lund, *The Case against Passive Shareholder Voting*, 43 J. CORP. L. 493, 515-516 (2018) (providing data suggestive of the fact that the Big Three might be dedicating insufficient resources to monitor the corporate governance of their portfolio companies).

¹²⁸ See Bebchuk, Cohen & Hirst, *supra* note 45, at 96-97 (showing that institutional investors only capture a minimal part of the benefits they create when they engage in stewardship and increase the value of portfolio companies).

¹²⁹ On the notion of "too-big-to-fail," see GARY H. STERN & RON J. FELDMAN, *TOO BIG TO FAIL: THE HAZARDS OF BANK BAILOUTS* (2004). On the idea of "too-interconnected-to fail" see Anne-Caroline Hüser, *Too Interconnected to Fail: A Survey of the Interbank Networks Literature*, (SAFE Working Paper, n. 91, 2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2577241.

¹³⁰ See Peter Conti-Brown, *Elective Shareholder Liability*, 64 STAN. L. REV. 409, 423-25 (2012) (discussing the impossibility of "Never Again" for bailouts, as they are a necessary evil).

incentives to engage in excessive risk-taking¹³¹ and to refrain from monitoring.¹³² Aware of these perverse incentives and of the risks they pose,¹³³ policymakers have recognized the need to implement a wide range of measures to mitigate the risk of SIFIs creating systemic negative externalities in the pursuit of firm value maximization.¹³⁴

Importantly, a recent strand of research has shown that SIFIs are not the only firms that can generate aggregate fluctuations.¹³⁵ Gabaix found that idiosyncratic shocks hitting the largest 100 firms explained one-third of US GDP aggregate fluctuations.¹³⁶ The key problem here is that modern economies are characterized by a few very large firms and many smaller ones, thus idiosyncratic shocks hitting firms or sectors cannot be diversified away and do result in macroeconomic consequences.¹³⁷

Many studies have confirmed this insight, while emphasizing the importance of intersectoral linkages. For instance, Acemoglu et al. found that when sectors have heterogeneous interconnectedness and size, a shock hitting the largest and most interconnected sectors can

¹³¹ See Saule T. Omarova, *The “Too Big To Fail” Problem*, 103 MINN. L. REV. 2495, 2500 (2019) (“The well-known notion of ‘moral hazard’ captures the economic inefficiencies associated with this implicit subsidy: large firms shielded from the negative consequences of their risk-taking have an incentive to take greater risks than they otherwise would”). See also Jonathan R. Macey, *Commercial Banking and Democracy: The Illusive Quest for Deregulation*, 23 YALE J. REG. 1, 6 (2006) (“bankers will try to transfer wealth from the government’s insurance fund to themselves by increasing the riskiness of their activities once the deposit insurance scheme is in place”).

¹³² See Adam J. Levitin, *In Defense of Bailouts*, 99 GEO. L. J. 435, 490 (2011) (“[I]f either or both creditors and shareholders of such a TBTF [too-big-to-fail] institution believe they will be made whole in a bailout-or not bear all the losses-they will have a reduced incentive to monitor the [TBTF] institution’s risk-taking, and they will not demand as great of a risk premium when they extend credit”).

¹³³ See Janet L. Yellen, Vice Chair, Bd. of Governors of the Fed. Reserve Sys., *Macroprudential Supervision and Monetary Policy in the Post-Crisis World*, Speech at the Annual Meeting of the National Association for Business Economics, Denver, Colorado (Oct. 11, 2010), <https://www.federalreserve.gov/newsevents/speech/yellen20101011a.htm> (“The emergence of [risky] behavior among the largest and most interconnected financial institutions is particularly dangerous, since these institutions are linchpins in our financial system and their failure could cause significant damage to large numbers of counterparties and the system as a whole”).

¹³⁴ On this regard, Daniel K. Tarullo, former member of the Board of Governors of the United States Federal Reserve Board, notes that regulations should account for the fact that “there would be very large negative externalities associated with the disorderly failure of any systemically important financial institution (SIFI), distinct from the costs incurred by the firm, its stakeholders, and the federal deposit insurance fund,” see Daniel K. Tarullo, *Macroprudential Regulation*, 31 YALE J. REG. 505, 513 (2014). See also Alessandro Romano, Luca Enriques & Jonathan Macey, 69 AM. U. L. REV. 967, 969 (“It is understood that the risk of a national or global economic meltdown attributable to the failure of a systemically important financial institution justifies aggressive regulation as well as significant departure from ordinary and customary corporate governance norms for SIFIs”).

¹³⁵ See Carvalho, *supra* note 12 at 36-38 (2014) (offering an overview of the literature that uses network theory to investigate how shocks at the micro level can have consequences at the macro level).

¹³⁶ See Xavier Gabaix, *The Granular Origins of Aggregate Fluctuations* 79 ECONOMETRICA 733 (2011).

¹³⁷ *Id.* at 735 (“[I]t is critical to show that ... diversification does not occur in an economy with a fat-tailed distribution of firms.”); see also Julian di Giovanni, Andrei A. Levchenko, & Isabelle Mejean, *Firms, Destinations, and Aggregate Fluctuations*, 82 ECONOMETRICA 1303, 1304 (2014) (reporting that “firm-specific components contribute substantially to aggregate fluctuations”).

affect many sectors and result in significant drops in the GDP.¹³⁸ In another paper, Acemoglu and coauthors found that when one accounts for interconnections among sectors and network effects, the impact of sectoral shocks is magnified and affects multiple sectors.¹³⁹ In a similar vein, Atalay found that industry-specific shocks explain at least *half* of the aggregate GDP fluctuations,¹⁴⁰ while Baqaee and Farhi confirmed that shocks to critical sectors can have “disproportionate macroeconomic effects.”¹⁴¹

Both policymakers and industry leaders are aware of these intersectoral interdependencies. For instance, during his congress testimony, Ford’s Chief Executive Officer asked the government to bail out its *competitors*:

If any one of the domestic companies should fail, we believe there is a strong chance that the entire industry would face severe disruption. Ours is in some significant ways an industry that is uniquely interdependent – particularly with respect to our supply base, *with more than 90 percent commonality among our suppliers*. Should one of the other domestic companies declare bankruptcy, the effect on Ford’s production operations would be felt within days – if not hours. Suppliers could not get financing and would stop shipments to customers. Without parts for the just-in-time inventory system, Ford plants would not be able to produce vehicles.¹⁴²

And the US Government responded by bailing out the main car manufacturers.¹⁴³ Similarly, during the current COVID-19 crisis, the US Government quickly intervened to

¹³⁸ See Daron Acemoglu, Asuman Ozdaglar & Alireza Tahbaz-Salehi, *Microeconomic Origins of Macroeconomic Tail Risks*, 107 AM. ECON. REV. 54, 54-57 (2017). On a similar note, see Daron Acemoglu et al., *The Network Origins of Aggregate Fluctuations*, 80 ECONOMETRICA 1977-78 (2012) (showing that local shocks can propagate through input-output relationships among firms and have aggregate consequences); Jean-Noël Barrot, & Julien Sauvagnat, *Input Specificity and the Propagation of Idiosyncratic Shocks in Production Networks*, 131 Q. J. ECON. 1543, 1544 (2016) (finding large negative spillovers from suppliers that are hit by a natural disaster to their customers).

¹³⁹ See Daron Acemoglu, Ufuk Akcigit & William Kerr, *Networks and the macroeconomy: An empirical exploration*, 30 NBER MACROECONOMICS ANN. 273, 277 (2016) (finding that the network multiplier, i.e. “the size of the total impact relative to the direct impact of the shock,” is 6.4. Therefore, the consequences of a shock are over 6 times larger when one accounts for inter-sectoral connections).

¹⁴⁰ See Enghin Atalay, *How Important Are Sectoral Shocks?*, 9 AM. ECON. J.: MACROECONOMICS 254, 254 (2017).

¹⁴¹ David Rezza Baqaee & Emmanuel Farhi, *The Macroeconomic Impact of Microeconomic Shocks: Beyond Hulten's Theorem*, 87 ECONOMETRICA 1155, 1155 (2019).

¹⁴² Alan Mulally, *Examining the State of the Domestic Automobile Industry*, Hearing, United States Senate Committee on Banking, Housing, and Urban Affairs (Nov. 18, 2008) (emphasis added). Other countries have also acknowledged the systemic importance of the car industry and have decided to bail out its key players. See, e.g., *France Unveils €6bn Auto Sector Bail-Out*, FIN. TIMES (Feb. 9, 2009), <https://www.ft.com/content/68f24efa-f694-11dd-8a1f-0000779fd2a>.

¹⁴³ See Kimberley Amadeo, *Auto Industry Bailout: Was the Big 3 Bailout Worth It?*, THE BALANCE (Mar. 6, 2019), <https://thebalance.com/auto-industry-bailout-gm-ford-chrysler-3305670>.

bailout airline companies,¹⁴⁴ because “[v]ast segments of our economy are built on the expectation that tourists can fly to their destinations, businesses can host face-to-face meetings, and shippers can deliver the latest smartphones and fresh flowers to stores.”¹⁴⁵

Against this background, the idea that firms that pose systemic and macroeconomic risk should behave as pure firm value maximizers is patently absurd. On the one hand, it is *prima facie* against any notion of social welfare maximization that such firms are asked to behave in a way that overlooks such gigantic externalities. On the other hand, exactly because of the key role of these firms, governments are forced to bail them out when they are in distress, effectively *rewarding* them for engaging in risk-taking that creates systemic and macroeconomic risk.

A similar logic applies to climate change. Emissions that cause climate change are what economists call a “public bad,” because their costs spill beyond the market in which they originate and are not reflected by market prices.¹⁴⁶ Thus, FVM shareholders have clear incentives to push firms to produce a level of emissions that is above the social optimum. But the cost of climate change, to which these emissions contribute, is enormous. The World Health Organization estimated that climate change will cause around 250,000 deaths per year between 2030 and 2050,¹⁴⁷ while according to a study published on *Nature* there is over a 50% chance that climate change will reduce global GDP by over 20% by 2100.¹⁴⁸ At the same time, a recent report has shown that the *top 20 companies account for 35% of all energy-related carbon dioxide and methane emissions worldwide.*¹⁴⁹ When the externalities produced by these 20 firms are so terrifying, it is hard to conceive of an argument in support of the idea that pure FVM is the most efficient approach.

We have thus identified three instances of local dynamics that can generate system-wide externalities: systemic risk, macroeconomic risk, and climate change. We do not claim this

¹⁴⁴ The website “COVID Bailout Tracker” offers detailed information on governments’ bailouts during COVID-19. For information on the airline industry see Accountable: COVID Bailout Tracker, *Airline Industry Bailout* (last accessed, Jan. 26, 2020) <https://covidbailouttracker.com/program/airline-industry-bailouts>.

¹⁴⁵ See Adie Tomer & Joseph W. Kane, *We should bail out airlines during the coronavirus pandemic – but on taxpayers’ terms*, BROOKINGS (Mar. 18, 2020), <https://www.brookings.edu/research/we-should-bail-out-airlines-during-the-coronavirus-pandemic-but-on-taxpayers-terms/>.

¹⁴⁶ See William Nordhaus, *Climate change: the ultimate challenge for economics*, 109 AM. ECON. REV. 1991, 1992 (2019).

¹⁴⁷ See WORLD HEALTH ORGANIZATION, CLIMATE CHANGE AND HEALTH (Feb. 1, 2018), <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>.

¹⁴⁸ See Burke, Marshall, Solomon M. Hsiang & Edward Miguel, *Global Non-Linear Effect of Temperature on Economic Production*, 527 NATURE 235 (2015). The tool to calculate the expected GDP cost for various countries and at a global scale is available at <https://web.stanford.edu/~mburke/climate/map.php>.

¹⁴⁹ See Richard Heede, *Carbon Majors: Updating Activity Data, Adding Entities, & Calculating Emissions: A Training Manual*, CLIMATE ACCOUNTABILITY INSTITUTE 35 (2019), <https://climateaccountability.org/pdf/TrainingManual%20CAI%2030Sep19lores.pdf>. Note also that none of these twenty companies is headquartered in the areas in Africa, where most of the deaths caused by climate change will concentrate, see WORLD HEALTH ORGANIZATION, CLIMATE CHANGE (2005), <https://www.who.int/heli/risks/climate/climatechange/en/> (last visited Jan. 24, 2021).

list to be exhaustive, but it does capture three of the most widely recognized threats to modern societies.

C. Central Firms

After having defined the three sources of risk, the next step is identifying the subset of firms that play a key role therein. We call these firms “central.”

To begin with, the subset of firms that create financial risk has already been identified by policymakers.¹⁵⁰ Every year, the Financial Stability Board—in consultation with the Basel Committee on Banking Supervision, national authorities, and the International Association of Insurance Supervisors—defines a list of financial institutions that are systemically important.¹⁵¹

Firms that can contribute to macroeconomic risk can be identified using the tools of network theory. A burgeoning literature has developed various measures of centrality, allowing policymakers to identify the firms and sectors that contribute the most to the creation of macroeconomic risk.¹⁵²

Finally, as noted above, firms that contribute to climate risk can be identified by measuring the emissions they produce. For instance, firms like Chevron, ExxonMobil, ConocoPhillips, and Peabody Energy are among the biggest emitters worldwide,¹⁵³ and hence can be considered climate-central firms.

For these three categories of central firms, a pure firm value maximization approach can lead to catastrophic consequences: under the firm value maximization paradigm, they have no incentive to internalize the gigantic externalities that they can create. Consequently, corporate law should be two-pronged. It should preserve the voice of FVM shareholders in peripheral firms, but at the same time enhance the voice of PVM shareholders in central firms.

IV. DIFFERENTIATING CORPORATE LAW FOR CENTRAL AND PERIPHERAL FIRMS

Our framework suggests that an identifiable subset of firms has a special ability to prevent, or mitigate, catastrophic harm. We further claim that corporate law should be tweaked for those firms to amplify the voice of PVM shareholders.

The idea of special rules for central firms is already well-established in financial regulation: SIFIs are subject to a detailed set of rules in order to minimize the risk of

¹⁵⁰ See e.g. Luca Enriques, Alessandro Romano & Thom Wetzer, *Network-Sensitive Financial Regulation*, 45 J. CORP. L. 351, 366-68 (2019).

¹⁵¹ See FINANCIAL STABILITY BOARD, GLOBAL SYSTEMICALLY IMPORTANT FINANCIAL INSTITUTIONS (G-SIFIs), <https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/> (last visited Jan. 24, 2021).

¹⁵² For a discussion of centrality measures in a legal context, see Alex Lee, Yoon-Ho & Alessandro Romano, *Insider Trading and Macroeconomic Risk* (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3731719.

¹⁵³ See Heede, *supra* note 149 at 35.

catastrophic harm which may result from their actions.¹⁵⁴ In this part, we explore how this idea can be extended to different types of systemic externalities, focusing on corporate law. What justifies the focus on corporate law is the ample empirical evidence that common owners are effective in inducing their portfolio firms to internalize inter-firm spillovers. Thus, our intuition is that further empowering PVM shareholders under specific circumstances can make the difference between conducts that ignore positive and negative externalities and conducts that account for them. Corporate law defines how shareholders interact among themselves and with managers, and also affects the way the latter cater to the former's (nowadays less than uniform) interests.

What we suggest is that, when it comes to central firms, corporate law should be adapted to enhance the voice of PVM shareholders, correspondingly weakening the influence of FVM shareholders. By way of illustration, we identify three policy areas within the realm of corporate law that may be part of our two-pronged approach to corporate law, namely dual shares, tenure voting, and ownership disclosure rules.¹⁵⁵

A. Dual Class Shares

The general rule is that each share has one vote, but corporations can deviate by issuing shares with differential voting rights ("dual class" shares). The framework developed in this article suggests that firms should be regulated differently with respect to dual class shares. More precisely, we argue that dual class shares of central firms should have a sunset provision.¹⁵⁶ On the contrary, peripheral firms should be allowed to freely design dual class shares.

The key feature of dual class shares is that they insulate founders and/or management from the pressure of capital markets and the market for corporate control, thereby potentially exacerbating the agency problem between shareholders and managers.¹⁵⁷ The Council of Institutional Investors has been very vocal in supporting the idea that non-voting shares in public companies should not exist.¹⁵⁸ A similar position has been taken by the Investor

¹⁵⁴ See generally Enriques, Romano & Wetzler, *supra* note 150, at 366-69.

¹⁵⁵ Tweaks to corporate law rules for systemically important financial institutions have been proposed in the past. See John Armour & Jeffrey N. Gordon, *Systemic Harms and Shareholder Value*, 6 J. LEGAL ANALYSIS 35, 64-76 (2014) (discussing *Caremark* duties in systemically important financial institutions).

¹⁵⁶ To be sure, firms adopt dual class shares at the IPO stage, when they are highly unlikely to be central. Therefore, the sunset clause we propose would be triggered at a later time, if ever, that is, when a dual-class firm becomes central.

¹⁵⁷ See e.g. FRANK H. EASTERBROOK & DANIEL R. FISCHEL, *THE ECONOMIC STRUCTURE OF CORPORATE LAW* 73 (1991); Lucian A. Bebchuk et al., *Stock Pyramids, Cross-Ownership, and Dual Class Equity: The Mechanisms and Agency Costs of Separating Control from Cash-Flow Rights*, in *CONCENTRATED CORPORATE OWNERSHIP* 295 (Randall K. Morck ed., 2000); Jeffrey N. Gordon, *Ties That Bond: Dual Class Common Stock and the Problem of Shareholder Choice*, 76 CALIF. L. REV. 1, 10-39 (1988).

¹⁵⁸ See COUNCIL INSTITUTIONAL INVESTORS, *DUAL-CLASS ENABLERS*, (archived Jan. 25, 2019), <https://www.cii.org/dualclassenablers> (arguing that "[u]nequal structures generally render low-vote shareholders powerless to exert direct accountability on board members who facilitated dual-class structures at the critical juncture of the IPO").

Stewardship Group,¹⁵⁹ which is a collective of US institutional investors that includes the Big Three.

At the same time, dual class shares allow managers to focus on long-term goals,¹⁶⁰ and grant innovative founders the freedom to pursue their vision.¹⁶¹ For instance, investors might believe that Warren Buffett—who controls Berkshire Hathaway thanks to multiple voting shares—is in the best position to run the company and that insulating him from the pressure of other shareholders could increase firm value in the long run. In a recent article, however, Bebchuk and Kastiel argue that dual class shares should have an expiration date.¹⁶² While they acknowledge that insulating innovative founders for a certain period might increase firm value, they argue that founders' advantages are bound to decrease over time due to technological evolution and changes in markets: Zuckerberg might have been the best choice for Facebook for much of its history, but he may no longer be today and may be even less so tomorrow. In the same vein, the Council of Institutional Investors sent a petition to the New York Stock Exchange and Nasdaq asking them not to list initial public offerings (IPOs) from firms that have dual class shares, unless there is a sunset clause which limits the duration of the different voting rights to at most seven years.¹⁶³

Against this background, a recent article by Dorothy Lund argues that dual class shares can *reduce* agency costs because non-voting stock allows companies to concentrate voting power among shareholders who are best informed about the company and its performance.¹⁶⁴ The basic argument is that shares that have voting power are more expensive than shares that do not, hence investors that do not plan to spend resources to cast informed votes—among which, Lund argued, are the largest asset managers—will prefer to buy shares without voting power.¹⁶⁵ At the same time, this will improve the incentives of informed investors, since their voting power will be enhanced by the fact that a significant fraction of the shares will no longer carry voting rights.¹⁶⁶

¹⁵⁹ See INVESTOR STEWARDSHIP GROUP, CORPORATE GOVERNANCE PRINCIPLES FOR US LISTED COMPANIES (Feb. 20, 2019), <https://isgframework.org/corporate-governance-principles/> (listing as a fundamental principle of corporate governance the idea that “[s]hareholders should be entitled to voting rights in proportion to their economic interest”).

¹⁶⁰ See generally Bernard S. Sharfman, *A Private Ordering Defense of a Company's Right to Use Dual Class Share Structures in IPOs*, 63 VILL. L. REV. 1 (2018).

¹⁶¹ See Zohar Goshen & Assaf Hamdani, *Corporate control, dual class, and the limits of judicial review*, 120 COLUM. L. REV. 941, *passim* (2020).

¹⁶² Lucian A. Bebchuk & Kobi Kastiel, *The Untenable Case for Perpetual Dual-Class Stock*, 103 VA. L. REV. 585 (2017).

¹⁶³ John C. Coffee, Jr., *Dual Class Stock: The Shades of Sunset*, THE CLS BLUE SKY BLOG (Nov. 19, 2018), <https://clsbluesky.law.columbia.edu/2018/11/19/dual-class-stock-the-shades-of-sunset/>.

¹⁶⁴ See Dorothy Shapiro Lund, *Nonvoting Shares and Efficient Corporate Governance*, 71 STAN. L. REV. 687 (2019).

¹⁶⁵ *Id.* at 719-723.

¹⁶⁶ *Id.*

However, Lund's theory cannot explain why the largest institutional investors buy voting stocks, even when non-voting stocks are available.¹⁶⁷ For instance, Google voting shares have constantly traded at a significant premium over non-voting shares, despite various provisions that guarantee equal treatment between the two classes of shares.¹⁶⁸ Therefore, if passive investors want to buy shares only to diversify their investments and leave control to the informed shareholders, they would systematically prefer cheaper shares without voting power. But BlackRock, Vanguard and State Street (the "Big Three") hold nearly identical amounts of class A (voting) and class C (non-voting) stocks in Google.¹⁶⁹

We argue that the solution to this riddle is that dual class shares serve an even more fundamental purpose than sorting investors into the informed and the uninformed. Their main function is to create a divide between FVM and PVM shareholders. By issuing dual class shares, the founders signal to the market that the company will be run as an FVM company instead of factoring in the potentially conflicting interests of its shareholders that happen to care about portfolio value maximization. Founders that hold dual class shares generally have a significant financial stake in the company they run relative to their overall wealth, and therefore have a clear motivation to increase firm value. For instance, unlike the Big Three, Google (now Alphabet) founders Sergey Brin and Larry Page will not have comparable stakes in their company and its rivals.¹⁷⁰ Therefore, they can be presumed to be focused on maximizing Alphabet's value irrespective of the consequences that this might have for other firms. Admittedly, founders can extract private benefits of control,¹⁷¹ but this is the price that investors pay to be sure that the company is not run with the interests of PVM shareholders in mind.

This perspective explains why institutional investors buy stakes in companies with dual class shares, while lobbying to ban such structures. Let us assume that an economy has a population of four firms: A, B, C, and D. Assume also that A and B compete in market X, whereas C and D compete in market Y. Last, assume that by investing heavily in R&D, firm D could develop innovations that would allow it to take over the entire market Y and to start competing for market X. One example would be Google's improvements in its search algorithm that led it to dominate the market for web browsers.

¹⁶⁷ *Id.* at 731.

¹⁶⁸ See Jesse Emspak, *GOOG or GOOGL Which Stock Do You Buy?*, INVESTOPEDIA (June 28, 2018), <https://www.investopedia.com/articles/markets/052215/goog-or-googl-which-google-should-you-buy.asp>.

¹⁶⁹ Lund, *supra* note 164 at 731 n.211 (reporting that the Big Three owned about 50.7 million of class A (voting) stocks and 52.1 million of class C (non-voting stocks)).

¹⁷⁰ An EDGAR search for Sergey Brin yields 435 entries: 331 are for Google and the remaining for Alphabet. The results are practically the same similar for Lawrence Page (508 entries either for Google or Alphabet). *Cf. also* Schmalz *supra* note 23 at 414 (making a similar point with respect to the largest shareholders of Walmart (Walton Family), Amazon (Jeff Bezos) and Berkshire Hathaway (Warren Buffett)).

¹⁷¹ See Dov Solomon, Rimona Palas & Amos Baranes, *The Quality of Information Provided by Dual-Class Firms*, 57 AM. BUS. L. J. 443, 446 (2020).

Assume now that PVM institutional investors dominate all four firms. Their optimal strategy might be to convince firm D to drop its plans to compete aggressively and enter new markets. This way, all their portfolio companies would enjoy extra competitive profits.

However, assume now that firm D has dual class shares, and therefore management can invest in R&D, regardless of whether institutional investors support this strategy or not. Institutional investors can no longer achieve their first best outcome, namely a lower level of competition within and across markets. Their decision is now whether or not to invest in D, but taking it as a given that D's controlling shareholders will act as firm value maximizers and try to gain value to the detriment of A, B and C. In the event that they decide to buy shares in D, they will suffer the losses that D imposes on their portfolio companies, but at least the value of their investment in D will grow. On the contrary, if they only invest in A, B and C they will still suffer losses stemming from D's actions, but without reaping any benefits.

In this scenario, the preferences of PVM institutional investors are clear: the first best strategy is advocating for the elimination of dual class shares. This way, institutional investors can ensure that all firms behave as portfolio value maximizers. However, if they cannot reach this outcome, their second-best option is to buy stakes in firms controlled by FVM shareholders. This is exactly what we observed, for instance, in the controversial IPO by Snap. The IPO was structured in such a way as to allow the two Snap co-founders to control almost 90% of the voting power while holding fewer than 20% of the outstanding shares.¹⁷² And yet, despite their fierce opposition to dual class shares in general, and to Snap's IPO structure in particular, institutional investors purchased Snap's shares *en masse*. Ironically, Rowe T. Price was one of the most vocal institutional investors against Snap's dual class shares,¹⁷³ but is now Snap's largest institutional shareholder with over 10% of its shares.¹⁷⁴ This suggests that institutional investors' campaigns against dual class shares may aim not only to ensure shareholders' representation and minimize firms' agency costs but also to prevent firms from committing to act in the interest of FVM shareholders.

The traditional discussion on dual class shares is rooted in a world of FVM shareholders, in which the main concern is ensuring that holders of shares with high voting power would not steer firms away from value maximization by extracting private benefits of control. In a world dominated by PVM shareholders, however, dual class shares serve a distinct function. They act as a signal that the firm will cater to FVM rather than PVM shareholders' interests. Most importantly, the presence of firms with dual class shares that act in FVM shareholders' interests also pushes other firms to engage in fierce competition. In the example above, the aggressive strategy of D forces A, B, and C to compete as well. It follows that in a world

¹⁷² See Lund, *supra* note 164 at 707.

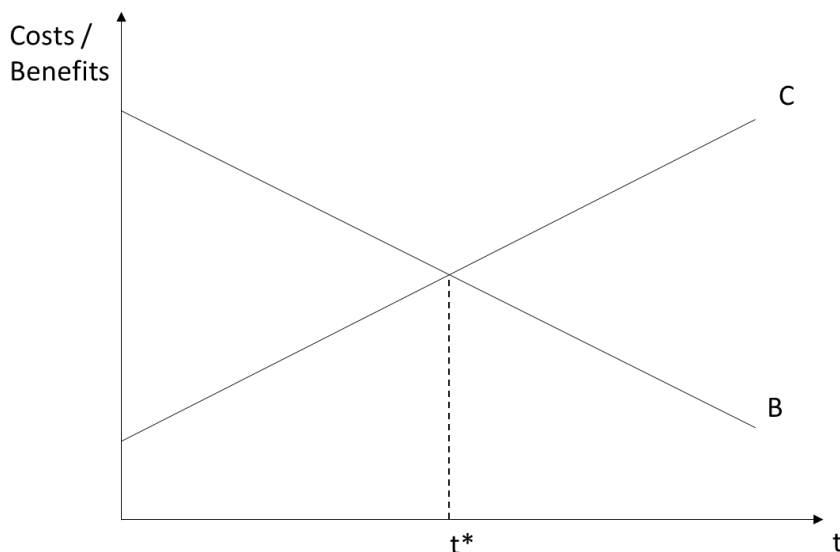
¹⁷³ See e.g. Paresh Dave, *Big Investor T. Rowe Price Challenges Snapchat Founders' Power*, L.A. TIMES (Jan. 19, 2017), <https://www.latimes.com/business/technology/la-fi-tn-snapchat-voting-20170119-story.html>.

¹⁷⁴ See *Snap, Inc. Institutional ownership*, CNN BUS. <https://money.cnn.com/quote/shareholders/shareholders.html?symb=SNAP&subView=institutional> (last visited Jan. 29, 2021).

dominated by PVM institutional investors, dual class shares are a key tool to ensure that some firms pursue firm value maximization, thereby pushing other firms to compete aggressively as well.

This framework also contributes to explaining why dual class share structures are increasingly common in the tech sector.¹⁷⁵ Firms operating in these industries are intrinsically disruptive, and their activity can destroy the business model of companies across many markets. Consequently, founders have stronger reasons to silence PVM shareholders that could constrain their growth when such growth threatens to disrupt the activity of many of their portfolio firms. At the same time, however, at least one of these tech companies with dual class shares, namely Alphabet, has become a central component of the U.S. economy, and therefore can impose macroeconomic externalities on the U.S. economy. How do we ensure that FVM shareholders push firms to compete aggressively, while preventing such catastrophic externalities?

The framework developed in this article suggests that it is possible to strike a balance between these goals by regulating firms differently depending on whether they are central or peripheral. For peripheral firms, our framework cuts against the idea that dual class shares should have an expiration date. The basic idea introduced by Bebchuk and Kastiel is that the benefits of dual class shares decrease over time, while the costs increase. Therefore, they suggest that, after a certain point, dual class shares become inefficient. In the graph below, we present the relationship that they hypothesize between costs (C) and benefits (B) of dual class shares over time (t):



¹⁷⁵ See Dhruv Aggarwal et al., *The Rise of Dual-Class Stock IPOs* 18 (2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3690670 (“most of the historical increase in dual-class firms stems from [industries, such as software, that heavily rely on Cloud computing technology for data management], where the percentage of dual-class IPOs in 2017-2019 exceeds 50 percent”).

The problem is that the slope and the intercept of B and C depend on the characteristics of the company and its founders, as well as on how market conditions evolve. As a consequence, they are likely to be different for each corporation. A regulator cannot estimate these variables for any individual firm, and therefore it cannot identify t^* . It follows that any legally mandated limit (t^l) on the duration of dual class shares is bound to be inefficient. For firms for which $t^* > t^l$, i.e. the prematurely switching firms, the companies will be effectively handed over to PVM shareholders even when it would be efficient to keep control in the hands of the founders. Instead, for firms for which $t^* < t^l$, which we can call the inertially non-switching firms, an inefficient structure would remain in place. Admittedly, one could argue that compared to a solution in which there is no expiration date, Bebchuk and Kastiel's proposal would represent an improvement on the status quo for inertially non-switching firms. Yet, there is no way to estimate whether the losses imposed on prematurely switching firms would outweigh the gains for inertially non-switching firms.

In addition, if one adopts an ex-ante perspective, the benefits of a sunset provision become dubious even for inertially non-switching firms. If investors believe that founders would extract excessively high private benefits of control, or that the duration of dual class shares is excessive, they will be willing to pay a lower price for the shares at the IPO stage.¹⁷⁶ In other words, market forces determine the characteristics of an offering and the price at which the shares are sold. In a situation in which a regulator has no way to determine t^* with any accuracy, it is unclear why it would be desirable to displace market forces by tying the hands of *both* potential investors and the founders. In fact, it should be noted that firms can already set an expiration date if they believe that this is the solution that would be rewarded by financial markets.

Bebchuk and Kastiel implicitly acknowledge that regulators cannot identify t^* , and in fact concede that shareholders unaffiliated with the controller should have the right to extend t^l . But there is an obvious problem with this solution. As we have discussed above, PVM shareholders have strong incentives to vote against dual class shares, even when doing so goes against the best interests of that company. Therefore, it is very likely that PVM shareholders would also vote against a renewal of dual class shares when $t^* > t^l$. Consequently, allowing shareholders to vote would make no difference: the regulator would *de facto* determine the duration of dual class shares.

The alternative is to let founders and market demand determine whether dual class shares should have an expiration date, and what that date should be. If investors fail to account for this information, they will then make a sub-optimal investment. Similarly, if the founders of a company overestimate their skills and do not provide for a sunset clause, their firm (and its shareholders) will suffer. But capitalism is based on the idea of creative destruction, and not

¹⁷⁶ See Ronald J. Gilson, *Evaluating Dual Class Common Stock: The Relevance of Substitutes*, 73 VA. L. REV. 807, 808-809 (1987) (noting that shares' lower voting rights will affect their market prices, "so that the company's owners at the time it goes public, and not the purchasers, bear the cost.").

on preventing firms' destruction or investor losses. Without destruction there can be no creation.

However, for central firms it might be useful to implement a sunset provision. This approach will ensure that individuals with idiosyncratic preferences and concentrated interests will not have permanent and absolute control over firms that can play a key role in causing catastrophic consequences. At the same time, as the sunset provision is only mandated for central firms, our solution preserves the role of FVM in all other firms, increasing the likelihood that some firms will compete aggressively on product markets.

B. Tenure Voting

Similar to dual class shares, tenure voting increases the voting power of long-term shareholders in order to incentivize them to become long-term investors and is adopted by companies to mitigate perceived short-termism.¹⁷⁷ Short-termism can be defined as an excessive focus on short-term results at the cost of long-term value creation.¹⁷⁸ Thus, the key idea behind tenure voting is to provide a reward of extra voting power to shareholders who have a special interest in the long-term performance of the company, as proxied by their holding of significant stakes in the company for a (relatively) long period.¹⁷⁹

Discussing whether and to what extent short-termism is a problem lies beyond the scope of this article.¹⁸⁰ What is relevant, however, is the need to regulate tenure voting differently in central and peripheral firms.

As noted by Coffee, tenure voting could work to the advantage of diversified institutional investors,¹⁸¹ and in particular to the advantage of those institutional investors that have most of their assets under management in index funds.¹⁸² If that is correct, tenure voting

¹⁷⁷ See David J. Berger, Steven Davidoff Solomon & Aaron J. Benjamin, *Tenure Voting and the US Public Company*, 72 BUS. LAW. 295, 297 (2016).

¹⁷⁸ See Lynne L. Dallas, *Short-Termism, The Financial Crisis, And Corporate Governance*, 37 J. CORP. L. 265, 267 (2011) (defining "short-termism" as "the excessive focus of corporate managers, asset managers, investors, and analysts on short-term results, whether quarterly earnings or short-term portfolio returns, and a repudiation of concern for long-term value creation and the fundamental value of firms.").

¹⁷⁹ To be sure, this is an imperfect proxy for long-termism, because there is no commitment to retain shares over time after getting "tenure." See COLIN MAYER, FIRM COMMITMENT 206-07 (2013).

¹⁸⁰ For an overview of the heated debate on short-termism see E. Norman Veasey et al., *Corporations: The Short-Termism Debate*, 85 MISS. L. J. 697 (2016).

¹⁸¹ See John C. Coffee, Jr., *Preserving the Corporate Superego in a Time of Stress: An Essay on Ethics and Economics*, 33 OXFORD REV. ECON. POL'Y 221, 250 (2017).

¹⁸² Paul H. Edelman, Wei Jiang & Randall S. Thomas, *Will Tenure Voting Give Corporate Managers Lifetime Tenure*, 97 TEX. L. REV. 991, 995 (2019) (noting that long-term institutional investors are "often time" passive). Note, however, that index funds' inclination to take advantage of tenured voting may be countered by two factors. First, index funds tend to gain revenues from stock lending. Because stocks that are lent not only cannot be voted by the lender (see Hu, Mitts & Sylvester, *supra* note 50) but will have to be held ex novo for the required period in order to be granted enhanced voting rights, they may be qualify for tenured voting for amounts lower than their entire

would likely give more powers to the very shareholders who do *not* have a special interest in the company. In fact, for passive funds, the weight of each company in their portfolio tends to be lower than for other funds. Therefore, they are the least likely to care about the performance of a given corporation and are instead most likely to focus on portfolio value maximization.

We suggest a tweak that should make tenure voting a better instrument to enhance firm value maximization. The intuition here is simple: shareholders are more likely to care about the performance of a specific company when it constitutes a larger fraction of their portfolio.¹⁸³ Therefore, for peripheral firms, the voting power should increase faster when the investor has placed a larger fraction of its assets in that company.

For firms that decide to implement tenure voting, the voting power of the shareholders should thus be calculated as follows:

$$V_i = S_i * (1 + \alpha t) * \left(\frac{I_i}{\beta \sum_1^n I_i} \right). \quad (1)$$

Where V_i is the total weight of the votes cast by the i th investor, S_i is the number of shares held by the i th investor, t indicates how long the shares have been held in the portfolio for, and α is a parameter to determine how quickly voting power should grow over time. Higher values of α imply that the voting power grows faster. I_i is the value of the investment in the firm, while $\sum_1^n I_i$ indicates the sum of the investments in all portfolio firms. β is a parameter to determine how much to constrain the voting power of institutional investors. Higher values of β imply that the voting power of institutional investors drops faster as they increase diversification.

Both α and β should be set by the firm, as the regulator is unlikely to have information on their optimal value for a given firm.

Just like for dual class shares sunsets, however, the rule should be different for central firms, given that in these instances PVM shareholders have preferences that are more in line with those of society. In particular, (1) can either become:

$$V_i = S_i * (1 + \alpha t), \quad (2) \text{ or}$$

$$V_i = S_i * (1 + \alpha t) * \left(\frac{\beta \sum_1^n I_i}{I_i} \right), \quad (3)$$

holdings. Second, if tenured voting comes at the expense of liquidity, in that tenured shares cannot be disposed of as easily as ordinary shares, index funds, who need to buy and sell shares continuously to meet redemptions and subscription requests, may similarly be disinclined to obtain the additional voting power for at least part of their holdings.

¹⁸³ See Eliezer M. Fich, Jarrad Harford & Anh L. Tran, *Motivated Monitors: The Importance of Institutional Investors' Portfolio Weights*, 118 J. FIN. ECON. 21 (2015); Erik P. Gilje, Todd A. Gormley & Doron Levit, *Who's paying attention? Measuring common ownership and its impact on managerial incentives*, 137 J. FIN. ECON. 152 (2020).

Formula (2) would eliminate the voting penalty for being diversified introduced in (1), whereas formula (3) would add a voting reward for being diversified. The choice between (2) and (3) depends on how much voice one intends to give to portfolio value maximizers in central firms.

C. *Ownership disclosure rules*

Despite their relatively small size, hedge funds play a key role in modern financial markets. Unlike mutual funds, hedge funds tend to acquire significant stakes in a relatively small number of companies to try and influence their business strategies.¹⁸⁴ Given that hedge funds are significantly less diversified than the large mutual funds, they can generally be assumed to be FVM shareholders.

In many instances, as described in a seminal paper by Gilson and Gordon, hedge funds play an important complementary role to that of the large mutual funds.¹⁸⁵ The large mutual funds tend to be rationally reticent, that is, to have weak incentives to become proactively involved in the corporate governance of their portfolio institutions. On the contrary, hedge funds are “governance entrepreneurs” that try to generate returns by becoming involved in the corporate governance of their portfolio companies and altering their strategies.¹⁸⁶ However, as hedge funds are more likely to be pure firm value maximizers while mutual funds sometimes act as portfolio value maximizers, the objectives of the two kinds of funds might diverge in some instances. Hedge funds might prefer FVM-only projects, whereas mutual funds might also be interested in the spillovers that such projects create for their other portfolio companies. The framework developed in this article suggests that in these circumstances corporate law should enhance the voice of PVM mutual funds in central firms, whereas it should enhance the voice of FVM hedge funds for all other firms.

The ability of a hedge fund to influence portfolio firms crucially depends on how many shares it can buy before the market learns about its intentions. In particular, an activist campaign generally starts with the hedge funds buying a significant stake in the target company at a price unaffected by the activist’s plans. When the hedge fund crosses the 5% threshold, it has 10 days to file a Schedule 13D statement disclosing its position in the target company.¹⁸⁷ After the market is informed about the position of the hedge fund, it generally becomes much more expensive to buy additional shares of the target company. Even assuming that the hedge fund can buy additional shares, it will reap lower profits from the sale of those shares at the end of the activist campaign. Consequently, disclosure rules play a pivotal part in determining the role of hedge funds in corporate governance. Decreasing the threshold above which a hedge fund must disclose its position—or reducing the period after which a hedge

¹⁸⁴ See Gilson & Gordon, *supra* note 38 at 867.

¹⁸⁵ *Id.* at 897-898.

¹⁸⁶ *Id.* at 897.

¹⁸⁷ 17 C.F.R. § 240.13d-1(a) (2020) (requiring any person acquiring beneficial ownership of any equity security of more than 5% to file with SEC statement on Schedule 13D within ten days after acquisition).

fund must disclose its position above the threshold—would lower the voice of hedge fund activists. The opposite would be true if the threshold or the disclosure window increased.

Within our framework, it is possible to imagine four kinds of projects, as presented in Table 1.¹⁸⁸

In the optimal conduct quadrant, hedge funds bring a project that is in the interests of the firm and the PVM shareholders. This situation fits squarely into the description given by Gilson and Gordon in their seminal paper, as hedge funds and mutual funds play complementary roles.¹⁸⁹ Hedge funds identify an opportunity to increase the value of a company, and mutual funds lend their voice to help hedge funds achieve that goal. The wasteful conduct quadrant is also uncontroversial. A hedge fund should not generally be interested in promoting a project that harms the firm in which it is investing. One might argue that hedge funds could promote projects that increase short-term value to the detriment of long-term value.¹⁹⁰ In this case, PVM shareholders that have long-term stakes (and are well-informed) would oppose the project.

In the PVM-only conduct quadrant a project would be PVM, but would not increase the value of the firm. A hedge fund would thus not agitate in favor of the project. Once again, the interplay, or lack thereof in this case, between hedge funds and large mutual funds would lead to the right outcome for the given firms.

The FVM-only conduct refers to projects that are FVM but not PVM. Hedge funds might have an interest in promoting them, but PVM investors will be unwilling to support them. Here, the outcome depends on the relative balance of power between the two kinds of institutional investors. More stringent disclosure requirements for hedge funds increase the relative power of universal owners and reduce the incentive for activists to initiate challenges, thus allowing the latter to block FVM projects that are not also PVM. Less stringent disclosure requirements boost the relative power of hedge funds, thus increasing the likelihood that FVM projects are passed despite the opposition of portfolio value maximizers.

Our framework suggests how projects included in the FVM-only quadrant should be dealt with. The voice of FVM shareholders in peripheral firms should be preserved or even enhanced, whereas in central firms a stronger role for PVM shareholders would be justified. Therefore, ownership disclosure rules should be tailored differently for central and peripheral firms: for the former, that play a key role in preventing the harms identified in section III.B., ownership disclosure obligations should be relatively more stringent. For firms that cannot play this role, disclosure obligations should be relatively less stringent.

¹⁸⁸ See *supra* text following note 33.

¹⁸⁹ See Ian R Appel, Todd A. Gormley & Donald B. Keim, *Standing on The Shoulders of Giants: The Effect Of Passive Investors On Activism*, 32 REV. FIN. STUD. 2720 (2019).

¹⁹⁰ Kahan & Rock, *supra* note 110, at 1083 (describing hedge funds as the “archetypal short-term investor”).

While we have focused mainly on hedge funds in this section, the arguments presented here similarly apply to the other main target of ownership disclosure rules, namely prospective takeover bidders. Takeovers have a disciplining effect on managers, which focuses them on firm value maximization. Thus the differentiation in disclosure obligations for central and peripheral firms that we have suggested with hedge fund activism in mind would also be appropriate for stake-building aimed at control acquisition.

V. A POSSIBLE EXTENSION: COVID-19 AND PORTFOLIO VALUE MAXIMIZERS

The COVID-19 pandemic has some important similarities with climate change, macroeconomic risk and systemic risk. It is a catastrophic event in which local dynamics have global consequences and in which interconnections are key. In fact, the virus can propagate only because these interconnections among individuals exist and the rate of propagation of the virus depends crucially on how interconnected society is.¹⁹¹ Therefore, one might be tempted to suggest that our framework should also apply where the goal is to prevent pandemics. However, while it is easy to envisage a role for institutional investors in preventing systemic risk or even in slowly but steadily pushing their portfolio firms to lower their carbon emissions, it is harder to imagine how they can play a role in the prevention of future pandemics. This seems to be a role for which health authorities and governments are better suited.¹⁹²

But there is an important caveat here: institutional investors might play an important role in *mitigating* the effects of catastrophic events like COVID-19. Finding a vaccine or a cure for serious contagious illnesses will happen faster if pharma companies cooperate and exchange information than if they worked separately. The social welfare gains from a vaccine or a cure will be of a greater magnitude than the profits yielded by the individual pharma companies discovering them. Therefore, firms may be inclined to invest in the research and development of a vaccine or a cure and exchange information among themselves less than would be socially optimal. Corporate behavior may change as a consequence of the fact that institutional investors own stakes in all companies working to develop a vaccine or cure and in many other firms that would benefit from their development. Thus, diversified institutional

¹⁹¹ See Goldin, *supra* note 6.

¹⁹² There are, however, some ways in which corporate behavior could help reduce the risk of future zoonotic diseases emerging. For example, experts warn that deforestation is one of the main causes of zoonotic diseases, since they force wild animals to new environments in which new opportunities for inter-species virus mutation arise. See Andrew P. Dobson et al., *Ecology and Economics for Pandemic Prevention*, 369 *SCIENCE* 379 (2020). Therefore, corporate behavior could effectively lower the probability of new pandemics arising through compliance with zero-deforestation goals: see Rachael D. Garrett et al., *Criteria for Effective Zero-Deforestation Commitments*, 54 *GLOBAL ENV'L CHANGE* 135 (2019).

investors want a remedy, not a winner.¹⁹³ Intriguingly, there is evidence that large institutions pushed firms to collaborate to develop a vaccine during the pandemic's first wave.¹⁹⁴

That does not mean that institutional investors succeeded in accelerating the development of COVID-19 vaccines. It is very likely that they did not. What we intend to suggest is that PVM shareholders not only have incentives to prevent catastrophic events from happening, but also to mitigate their consequences. It is therefore worth exploring how to leverage their preferences during exceptional times such as the ones we are living in. One possibility could be enhancing the voice of PVM shareholders in firms that can play a key role in mitigating a catastrophic harm, but only for the time in which the efforts to mitigate the harm are required. In the case of COVID-19, this would have meant enhancing the role of PVM shareholders in pharma companies and key related businesses until a vaccine was developed and distributed.

Yet, the practical implementation and the political challenges of switching from an FVM to a PVM model of corporate law for companies in a given sector would be daunting, which is why we stop short of analyzing the pros and cons of such a switch, let alone providing a template for how to implement it.

VI. CONCLUSION

In this article we have suggested that the traditional view of corporate law was premised on two assumptions that are no longer true: (i) all shareholders are firm value maximizers; and (ii) local shocks do not produce aggregate consequences. Today, both assumptions are false. This implies that corporate law should be fundamentally revisited, as aligning the preferences of managers to those of FVM shareholders is inconsistent with the new reality of PVM shareholders and systemic externalities. We have suggested that the focus of corporate law should be different for central and peripheral firms. In central firms, it should amplify the voice of PVM shareholders. In all other firms, it should preserve the role of FVM shareholders. In the course of this article, we have offered three illustrations of how this can be achieved.

¹⁹³ See Matt Levine, *Investors Want a Cure Not a Winner*, BLOOMBERG (Apr. 24, 2020), <https://www.bloomberg.com/opinion/articles/2020-04-24/investors-want-a-cure-not-a-winner>.

¹⁹⁴ See Attracta Mooney & Donato P. Mancini, *Drugmakers Urged to Collaborate on Coronavirus Vaccine*, FIN. TIMES (Apr. 24, 2020) (discussing how BlackRock and other institutional investors pushed pharmaceutical companies to collaborate, even with competitors, to the development of a vaccine), <https://www.ft.com/content/b452ceb9-765a-4c25-9876-fb73d736f92a>.

about ECGI

The European Corporate Governance Institute has been established to improve *corporate governance through fostering independent scientific research and related activities*.

The ECGI will produce and disseminate high quality research while remaining close to the concerns and interests of corporate, financial and public policy makers. It will draw on the expertise of scholars from numerous countries and bring together a critical mass of expertise and interest to bear on this important subject.

The views expressed in this working paper are those of the authors, not those of the ECGI or its members.

ECGI Working Paper Series in Law

Editorial Board

Editor	Amir Licht, Professor of Law, Radzyner Law School, Interdisciplinary Center Herzliya
Consulting Editors	Hse-Yu Iris Chiu, Professor of Corporate Law and Financial Regulation, University College London Horst Eidenmüller, Freshfields Professor of Commercial Law, University of Oxford Martin Gelter, Professor of Law, Fordham University School of Law Geneviève Helleringer, Professor of Law, ESSEC Business School and Oxford Law Faculty Curtis Milhaupt, Professor of Law, Stanford Law School
Editorial Assistant	Úna Daly, ECGI Working Paper Series Manager

Electronic Access to the Working Paper Series

The full set of ECGI working papers can be accessed through the Institute's Web-site (<https://ecgi.global/content/working-papers>) or SSRN:

Finance Paper Series	http://www.ssrn.com/link/ECGI-Fin.html
-----------------------------	---

Law Paper Series	http://www.ssrn.com/link/ECGI-Law.html
-------------------------	---

<https://ecgi.global/content/working-papers>