Universal Ownership and the Polycrisis:

Social Norms, Feedback Loops, and the Double Hermeneutic

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ABSTRACT

In the context of worsening global systemic risks, sometimes referred to as an emerging "polycrisis", universal owners – diversified asset owners such as pension funds and endowments – have an interest in preserving financial stability and the social and environmental substrates that support the functions of the real economy. This article examines how norms in the financial system arise, take hold, and become self-fulfilling, and evaluates universal ownership theory as an emerging norm in the financial system by testing it against two norm formation frameworks. It assesses the extent to which the 25 largest global asset owner organisations publicly self-identify as universal owners, analyses these funds' use of two "material devices" that align with impact-oriented approaches to investment and stewardship activities, and recommends a set of indicators to monitor whether universal ownership is taking hold as a self-reinforcing financial sector norm. These analyses find stark differences between self-identified universal owners and peer funds without such a self-designation. The article concludes by proposing the addition of a new condition to the norm formation literature: that of "velocity", which helps to determine the speed and likelihood of a norm's spread. The article also proposes the concept of "norm accelerants" – mainstream actors and institutions that can play a significant role in bringing an emerging norm into and through the acceleration stage to broad acceptability.

Keywords: Institutional investors; Systemic risks; Social norms; Climate change.

JEL Classification: A13, A14, E02, E12, E21, E24, E44, E62, F55, F64, F65, F66, G01, G02, G11, G12, G15, G18, G23, G28, G30, G32, G34, H41, H50, H63, H87, I14, I18, J28, J30, J83, K20, M42, O15, O16, P48, Q24, Q25, Q28, Q35, Q38, Q40, Q50.

I. INTRODUCTION

The 2023 World Economic Forum Global Risks Report refers to the assemblage of growing systemic social and environmental risks and the attendant supply chain, inflationary, and geopolitical pressures currently facing humanity as a potential "polycrisis" (World Economic Forum 2023), defined as "a single, macro-crisis of interconnected, runaway failures of Earth's vital natural and social systems that irreversibly degrades humanity's prospects" (Homer-Dixon et al. 2022). For universal owners – long-term diversified asset owners such as pension funds – growing awareness of these interconnected vulnerabilities in the social and natural realms reinforces an understanding that externalities generated in one part of the system add outsized costs to the rest.

This paper summarises the literature analysing contemporary systemic risks; quantifying opportunities for universal owners to counter these systemic risks; and exploring how norms emerge and reinforce themselves in the financial sector. It also assesses universal ownership theory against two norm frameworks, one describing the process of norm formation (McAdams 1997) and the other describing the process by which a norm becomes self-fulfilling in the financial sector (Marti & Gond 2018). It lays out the challenges and indicators to monitor within both frameworks, evaluates the extent to which the world's largest asset owner organisations self-identify as universal owners, and assesses whether self-identification translates into changes in behaviour that align with impact-oriented approaches to investment and stewardship activities. These analyses reveal surprisingly strong contrasts between universal owners and peer institutions without a universal ownership mindset.

The paper concludes by proposing the addition of a "velocity" factor to the norm formation literature – the role of speed and momentum in the likelihood that an emerging norm will become established – and the concept of "norm accelerants" – mainstream actors who have an outsized role to play in establishing the acceptability of a new norm.

II. UNIVERSAL OWNERS

Universal owners are large, long-term institutional investors – such as pension funds and sovereign wealth funds – that have an interest in the performance of the financial system and real economy as a whole (Dimson et al. 2013; Hawley and Williams 2000; Quigley 2025, inter alia). This paper follows Quigley's (2025) narrower definition of universal owners as asset owners, not asset *managers*.[1] Universal owners own a more or less representative slice of financial markets[2] and lack the ability to diversify away from large-scale externalities and systemic risks. The harms caused in one company or sector in a universal owner's portfolio appear in the form of costs borne by companies or sectors elsewhere in their holdings. For example, a company that emits vast quantities of greenhouse gases may itself profit from activities that produce these emissions, but will impose costs associated with the harms of climate change, including health impacts, on society – and the market – overall. For all the focus on alpha – a fund's performance relative to the market – most returns are attributable to overall market performance. Ibbotson (2010) finds that, even after accounting for interaction effects, 75% of a pension fund's performance is due to general market movements. Other estimates find that 90% or more of investors' returns come from overall market returns (Brinson, Hood, and Beerbower 1986; Hensel, Ezra, and Ilkiw 1991; Ibbotson and Kaplan 2000; Lukomnik and Hawley 2021).

Investors tend to focus on alpha even though market performance overall has a much greater effect on returns. Market returns may increasingly dominate performance, as ever more climate effects manifest themselves in costs to individual companies, entire sectors, and the real

[1] Fund managers, although regularly mislabelled as universal owners, have a different set of incentives and interests relative to their clients, the asset owners (universal owners). Fund managers' interests lie in maximising assets under management (AUM) and risk-adjusted performance relative to the market; asset owners' interest is in preserving the long-term value of the portfolio so as to satisfy long-term liabilities or duties. See Quigley (2025, forthcoming) for further elaboration.

[2] As Gosling (2024) points out, this is not the same as a slice of the real economy, and contagion from systemic risks may affect financial holdings some time after the effects have been felt in the real world.

economy. Covid-19, the Ukraine and Middle Eastern wars, supply chain woes, and inflationary pressures have revealed further systemic risks that threaten the health and stability of the financial system and that may require coordination among universal owners to address. Individual companies have neither the incentives nor the ability to mitigate systemic risks, but their contributions to these threats affect the overall returns of their owners. Companies may have a comparative advantage in addressing public harms that emerge from their business activities (Edmans 2020), meaning that other actors universal owners might pressure – such as government or standard-setting bodies – may benefit from the support of universal owners who invest across multiple jurisdictions. Universal owners, by dint of their size, long-term focus, and reliance on market returns, have strong incentives to help counter preventable global threats; legal analyses increasingly suggest that long-term performance of portfolios requires taking action (Hilf and Rouch 2021), especially as regards climate change (Financial Markets Law Committee 2024).

Universal ownership describes diversified asset owners' vulnerability to systemic risks, but not all universal owners will recognise this and act accordingly. Universal owners exposed to systemic risks may still fail to act to mitigate these risks in the real world. Subsequent sections assess the risks universal owners face, actions taken thus far, and whether these actions conform to the interests of diversified owners of capital with an interest in mitigating systemic risks at source.

III: THE POLYCRISIS: EMERGING INTERCONNECTED SYSTEMIC RISKS

The emerging and interconnected systemic risks of recent years are now sometimes referred to as a burgeoning "polycrisis". Some risks were long foretold: experts had suggested for years prior to Covid-19 that a pandemic was inevitable (Global Preparedness Monitoring Board 2019) and that "[a] yearly investment of US$ 1.9-3.4 billion to strengthen animal and human health systems would yield an estimated global public benefit of over US$ 30 billion annually, because it would avoid the economic damages associated with pandemics" (Schar et al. 2018). Covid-19 alone is estimated to have cost the global economy $14 trillion (Gopinath 2022).

Covid-19 exposed the costs of failing to prepare for biological risks; it also revealed the role that human-caused biodiversity loss and climate change play in the emergence of disease: deforestation and habitat fragmentation increase the incidence of contact between humans and other primates, augmenting the risk of zoonotic disease (Bloomfield, McIntosh, and Lambin 2020), and deforestation is linked to coronavirus transmission from bats to humans (Afelt, Frutos, and Devaux 2018). Reduced biodiversity increases the risk of infectious disease in humans, while protecting biodiversity reduces this risk (Keesing et al. 2010). Climate change contributed to the emergence and transmission of Covid-19 and is likely to contribute to pandemics in future (Gupta, Rouse, and Sarangi 2021).

Covid-19 also intensified multiple social systemic risks. Inequality, which increased in many places during the pandemic, itself impairs the economy[3] (Keeley 2015) and fosters populism and the erosion of democracy (Foa et al. 2020). The virus intensified other forms of inequality as well: racial minorities were vastly overrepresented among Covid-19 fatalities (Sze

[3] Low-wage earners have a higher propensity to consume (Van Lerven, Krebel, and Stirling 2019; Jappelli and Pistaferri 2014; Parker 2017; Parker et al. 2013; Botta et al. 2019), so additional spending power on their part can act as a boost to the economy.

et al. 2020) and subsequent inflationary pressures have had disproportionate effects on lower-income groups (Office for National Statistics 2022; Gill and Nagle 2022).

Worsening climate change and biodiversity loss would impose further complications. Over half of global Gross Domestic Product (GDP) is "moderately or highly dependent" on biodiversity (World Economic Forum 2020), with unmitigated climate change projected to impose staggering costs on the global economy (Kikstra et al. 2021; Kotz, Levermann, and Wenz 2024). Asylum applications from low-income countries to wealthy countries already rise during periods of fluctuations in temperature (Missirian and Schlenker 2017), and catastrophic climate change could result in 1 billion forced migrants by 2050 (International Organization for Migration 2019), with conflict likely rising concomitantly (Abel et al. 2019).

These illustrative interconnected systemic risks have significant implications for universal owners. The cost of prevention of biodiversity loss (World Economic Forum 2020), pandemic risk (Schar et al. 2018), and climate change (European Environment Agency 2023) are much lower than their costs if unmitigated.

IV: Is ESG Helping to Prevent the Emergence of the Polycrisis?

Investors concerned with environmental and social systemic risks tend to deploy Environmental, Social, and Governance (ESG) tools and products, which do not focus on investors' *impact* on social and environmental issues but rather risk *to* the portfolio or improving returns (Pollman 2022).

Common tactics deployed by ESG investors involve applying exclusions or tilts to public equity holdings, where there is little to no impact (Kölbel et al. 2020; Quigley 2025), or requesting voluntary disclosure from individual companies (Quigley, Bugden, and Odgers 2020), although improved environmental disclosure does not correlate positively with changes in company behaviour (Doan and Sassen 2020). The rise in ESG investing has had little discernible effect on company behaviour (Busch, Bauer, and Orlitzky 2016; Kölbel et al. 2020; Quigley 2025).

The vast majority of ESG strategies, funds, and indices apply only or mostly to public equity holdings (Mésonnier and Nguyen 2021; Hill 2020; Scholtens 2006), with sparse offerings in more impactful asset classes. Listed companies receive no additional funds when investors buy shares, nor do they lose funds when they sell shares. Shares are, instead, traded among shareholders; the share an investor buys is bought from another shareholder. Most new capital a listed company receives is from the products it sells – oil, gas, or coal in the case of a fossil fuel company – and through new bond issues and bank loans (Cojoianu, Ascui, et al. 2021; Cojoianu, Hoepner, et al. 2021). Exclusions on the debt side have a greater impact on companies' cost of capital (Cojoianu, Ascui, et al. 2021; Cojoianu, Hoepner, et al. 2021; Hong and Kacperczyk 2009; Hoepner et al. 2016; Quigley 2023), but ESG exclusions or tilts often do not extend to bond holdings.

Shareholder engagement is often discussed as an alternative to divestment, but empirical evidence suggests that existing practices are unlikely to address social and environmental systemic risks (Quigley, Bugden, and Odgers 2020). Many studies use as a measure of "success" the improvements in companies' ESG scores[4], which do not necessarily correlate with real-world improvements. A large study of ESG-related coordinated engagements found that over 40% were successful (Dimson, Karakas, and Li 2019), but the goals were almost entirely confined to targets such as improved voluntary disclosure, reporting, and adoption of voluntary standards. Improved environmental disclosure and reporting is weakly negatively correlated with improved environmental performance (Doan and Sassen

[4] ESG scores are famously divergent (Berg et al. 2022) and "socially constructed" (Eccles and Stroehle 2018).

2020); even "successful" engagements with disclosure-related targets may not lead to company behaviour change.

More effective tools include exclusions or screens on the debt side – withdrawal of lending and underwriting services from banks and refusal from investors to purchase bonds (Quigley 2023) – which can have an impact on companies because lower investor or bank demand for company debt affects how much capital they can raise and at what price (Liying Wang 2021; Bessembinder et al. 2022; Hotchkiss et al. 2021). This in turn can affect a company's internal "hurdle rate" – the financial returns required to make a significant new expenditure (Zhou, Wilson, and Caldecott 2021). For example, if enough investors and banks decline to lend to fossil fuel expansionists, a utility raising funds to build a new gas-fired power plant may find that its cost of capital exceeds the hurdle rate it needs to clear to build that new plant.

In public equity, where investor impact is very low, the most effective tactic for investors may be to vote against the (re-)election of directors. Investors vote in board elections anyway, and most are uncontested, with even underperforming candidates receiving well over 90% of investor support (Cai, Garner, and Walkling 2009). Even at relatively low levels of dissent, however – with 11% or fewer investors opposing a candidate – this tactic is substantially more effective at prompting company-level behaviour change than even majority-supported shareholder resolutions (Del Guercio, Seery, and Woidtke 2008; Ertimur, Ferri, and Muslu 2011; Aggarwal, Dahiya, and Prabhala 2019; Liu et al. 2020; Ertimur, Ferri, and Oesch 2017). Social stigma appears to be one of the prime mechanisms behind this tactic's effectiveness; shame is a more powerful motivator than esteem for individuals (Casal and Mittone 2016; Alpízar and Gsottbauer 2015), perhaps even more so for high-status individuals (Braithwaite 1989). Attracting dissent at one company can even threaten a board member's role on other companies' boards (Fos and Tsoutsoura 2014), a direct financial hit. Organised efforts to vote against directors – "Vote No" or "Just Vote No" campaigns – appear to be particularly effective (Del Guercio, Seery, and Woidtke 2008; Ertimur, Ferri, and Muslu 2011), even beyond what raw vote counts would imply, with markets reacting positively to "Vote No" announcements in the assumption that they will be successful (Del Guercio, Seery, and Woidtke 2008). The mere threat of voting against directors has been found to prompt company behaviour change (Iliev et al. 2015).

In summary, neither public equity exclusions nor voluntary disclosure-based requests of companies is likely to lead to real-world company-level behaviour change. For universal owners, ESG as currently practiced is unable to meet their requirements; a stock-picking approach is unable to protect the portfolio as a whole. Bond exclusions and votes against directors, however, represent more effective "material devices" universal owners can use to reduce companies' externalisation of costs onto other parts of the portfolio.

V. Norms, Feedback Loops, and the Double Hermeneutic

Feedback loops are common in nature, finance, and ordinary human interactions. They are evident in everything from stampedes and mass hysteria to international treaty negotiations and financial bubbles. For universal owners, feedback loops concerning public opinion and the financial system are most relevant. Both are sometimes vulnerable to the double hermeneutic, first explored by Giddens (1984), who explains how theories in the social sciences can influence or produce the phenomena they describe.

Ghoshal (2005) identified the operation of the double hermeneutic in contemporary business school education in his classic journal article, "Bad Management Theory is Destroying Good Management Practices". In Ghoshal's view, for example, business schools' emphasis on agency theory – the idea that the incentives of managers and owners diverge – may subconsciously encourage students to behave unethically (Ghoshal 2005); they may come to view managers' unethical behaviour as common and normal, making it more likely that they would behave this way themselves.

Several studies have linked the teaching of agency theory or *homo economicus* (a descriptor of humans as rational, self-interested beings) with more self-interested behaviour on the part of students educated in business, finance, or economics. These studies suggest that, over and above the self-selection effect – whereby more self-interested people choose to study business or economics (Carter and Irons 1991; B. Frank and Schulze 2000) – students exposed to agency theory, *homo economicus*, and greed-is-good social norms in the course of their education are more likely to behave selfishly under experimental conditions (R. H. Frank, Gilovich, and Regan 1993; Long Wang, Malhotra, and Murnighan 2011); the double hermeneutic may be activated on a regular basis in economics and business education.

Within the financial system, stark cases of the double hermeneutic abound. The famous Black-Scholes theorem was inaccurate when first developed, but *became* accurate once it was widely known and believed (Ferraro, Pfeffer, and Sutton 2005; Mackenzie and Millo 2003). The creditworthiness of an individual or institution may decline as they encounter difficulties gaining access to credit (Brunnermeier et al. 2016; Bebchuk and Goldstein 2011). Hormonal changes in traders in response to market downturns can intensify the downturn as the traders become increasingly risk-averse (Coates 2013). The financial system is in part a social system, and feedback loops and the double hermeneutic can take hold there much as they can in other social environments.

V.I How Norms Emerge and Become Self-Fulfilling

Humans' beliefs and behaviour are heavily influenced by prevailing social norms (Wilson 2012) and studies have shown this to a comic degree. In one classic study, when asked to assess whether three sticks matched the length of a fourth stick, a large proportion of participants pointed to the (evidently) wrong one when the other people in the room – confederates of the researchers – did so first (Asch 1951), against the evidence of their own senses. In another, either one or three students sat in a room that began to fill with smoke. Only 10% of students accompanied by two non-reactive study confederates took action, while 75% took action when alone (Latane and Darley 1968; Fischer et al. 2011).

The legal system is dependent on social norms to preserve public order. Social norms ensure that most people follow most of the rules most of the time, sometimes rendering the enactment of actual laws "surprisingly unimportant" (McAdams 1997, 340). Evolutions in social norms often reflect, and are reflected by, changes in the law. The concept of fiduciary duty has undergone significant changes over the past few decades. Incorporating climate risk into investment decisions was first prohibited, then permitted, and may soon be required. In some jurisdictions divestment or exclusions were only thought to be allowed if they had no negative effect on financial performance, but exclusions are now widely permitted (Richardson 2017), even at significant risk or cost in some cases (Graham 2022). The Freshfields II report found that investing and engaging for environmental and social impact is already permitted in 11 major jurisdictions and is now arguably required given the increasing severity of a range of systemic risks (Hilf and Rouch 2021), and the UK Financial Markets Law Committee recently found that climate change represented a material financial risk for fiduciaries to consider (Financial Markets Law Committee 2024). This evolution in the interpretation of fiduciary duty has tracked society's growing concern over climate change.

Norms in such areas may also emerge consciously. The divestment movement has been identified as a "norm entrepreneur" (Ayling and Gunningham 2017; Green 2018) because it has purposely advanced new norms such as "the desirability of going fossil-free" (Gunningham 2017, 376). Norm entrepreneurs attempt to establish, socialise, and normalise attitudes and behaviours in a given domain (Green, 2018; Ayling & Gunningham, 2017). Once these norm entrepreneurs have succeeded in convincing enough people, the norm can achieve a "threshold or tipping point" (Finnemore and Sikkink 1998, 901).

Social norms are particularly pervasive tools in corporate law (Eisenberg 1999), and companies' behaviour appears to be influenced more by norms than by the law itself (Coffee 2001). This is evident in punishments common to the corporate world, where informal compliance mechanisms such as non-legal commitments and sanctions are used extensively (Charny 1990). Social norms, then, are powerful within the general population as well as in financial and the law.

V.II Two Norm Formation Tests for Universal Ownership

The following section assesses universal ownership theory against two norm formation frameworks – one generally applicable and the other specific to financial system norms – and systematically explores the challenges and indicators to monitor associated with each step or condition in the two frameworks.

First Norm Formation Test: McAdams

Legal scholar Richard McAdams theorises that many norms arise from the human desire for respect from others, for relative esteem, whether in an attempt to avoid appearing deviant or out of a desire to look good. He bases this theory on a suite of social science literature suggesting that people seek the approval of others, will bear costs for the sole reward of this approval, and will attempt to conform to others' beliefs and behaviour to avoid becoming the sole "deviant" (McAdams 1997, 356).

McAdam's three major factors in the emergence of a new norm are whether a) the issue enjoys a consensus among the group in question, b) there is a reasonable chance of detection[5], and c) the consensus and chance of detection are widely known. As more people comply with the emerging norm, by definition a shrinking number of people deviate from it – and thus the esteem costs to the latter rise as they increasingly become the rare exceptions to an ever more ubiquitous norm. McAdams' test explains which factors contribute to the emergence of a norm, and how the feedback mechanism can help it to grow.

McAdams Norm Test Part I: Consensus

For universal ownership theory to meet the standards of McAdams' test, there would have to be a consensus on the theory itself – that it is legitimate, logical, or desirable. An assessment of the current public statements of the world's 25 largest asset owner organisations suggests that a consensus is building but not yet fully established:

Table 1[6]

Largest 25 Asset Owners	**Self-Described Universal Owners**	**Exemplar Quotations**
Government Pension Investment Fund	Yes	"As a "Universal owner" and "Cross-generational investor," GPIF is committed to promoting ESG investment in order to reduce negative externalities such as environmental and social issues, to improve the long term return of the portfolio across all assets. [. . .] if the share prices of some portfolio companies increase as a result of conducting business activities without paying attention to their large impacts on the environment and society for the sake of shortterm revenue expansion, and society and the economy as a whole, including other companies, are negatively affected by such activities, the overall portfolio of a universal owner will be significantly impaired. In other words, the sustainability of the capital market and society is a prerequisite for the sustainability of universal owners' portfolios."

[5] Note that, in his formulation, "detection" would be of a negative act or belief; for our purposes "detection" might refer to whether positive *or* negative acts or beliefs could be known by other members of the group.
[6] See Appendix I for sources.

Norges Bank Investment Management	Yes	“[W]e believe that policy engagement that is rent seeking in nature, rather than supportive of long-term value creation, runs counter to our long-term interests as a universal owner.”
China Investment Corporation	No	
SAFE Investment Company	No	
Abu Dhabi Investment Authority	No	
Kuwait Investment Authority	No	
National Pension (South Korea)	No	
GIC Private Limited	No	
Federal Retirement Thrift (FRTIB)	No	
Public Investment Fund/Sanabil Investments	No	
APG/ABP	Yes	“Institutions like ABP are also known as ‘universal owners’. As we invest in many segments of the global economy, we have a deep interest in maintaining a stable and sustainable economy and society.”
California Public Employees	Yes	“CalPERS is what’s known as a “universal owner.” We own a little of everything across the global financial markets.”
Qatar Investment Authority	No	
Canada Pension Plan	Yes (no recent public statements)	“. . . Universal investor with holdings in over 2,600 companies.”
Central Provident Fund	No	
National Social Security Fund (China)	No	
Temasek Holdings	No	
CDPQ	Yes (no recent public statements)	“Mindful of the complex issues surrounding socially responsible investment, [CDPQ] is convinced of the need to play its role as a “universal owner,” in concert with other major global investors.”
California State Teachers Retirement System	Yes	“As a broad market investor or ‘universal owner’, CalSTRS leverages our influence with securities regulators, standard-setters, legislators, environmental and energy agencies, and policy makers to set expectations for corporate behavior regarding net zero and to mandate investor-grade climate reporting.”
Mubadala Investment Company	No	
PGGM	Yes	“PGGM views itself as a universal investor. The universal investor concept presumes that large institutional investors (i) hold equity of many or even most (listed) companies in all major indices worldwide, (ii) tend to invest for sustainable long-term returns, and (iii) possess economic interests that are aligned with (or even identical) to those of the broader society.”
New York State Common	Yes	“As a long-term owner that invests in all sectors of the economy (i.e., a “universal owner”), the Fund works to promote sound ESG practices at the public companies in its portfolio through active ownership and targeted public policy advocacy focusing on sustainability, diversity and accountability.”
Investment Corporation of Dubai	No	
New York City Retirement	Yes	“As long-term, universal investors, invested broadly across the economy and across the planet, we know that ignoring climate change’s destabilization of the economy is not an option.”
Employees Provident Fund	No	

Of the world's 25 largest asset owners, 8 to 10[7] (32% to 40%) – including the two largest – publicly self-identify as universal owners, accounting for 33% to 38% of the 14 trillion USD in assets under management represented among the group. With the exception of Federal Retirement Thrift, Korea's National Pension, and possibly Canada Pension Plan and CDPQ, all of the OECD funds in the global top 25 self-identify as universal owners. This may be an underestimate; in a 2024 survey of large asset owners, 65% considered themselves universal owners[8]. Figures this high have normative implications, as discussed in Section V.III.

<u>Challenges</u>: Barriers to universal ownership exist in the minds of some investors; the most significant may be the lack of evidence regarding the extent to which portfolio companies' externalities add greater costs to other portfolio companies than can be compensated for by the externalisers' returns (Urwin 2011). Although evidence is increasingly available as to the staggering costs associated with systemic risks such as climate change (Kikstra et al. 2021; Kotz, Levermann, and Wenz 2024), biodiversity loss (Dasgupta 2021; World Economic Forum 2020), and antimicrobial resistance (O'Neill 2016), empirical research demonstrating the *portfolio* harms of these externalities is still needed. This challenge relates to the perceived costs associated with acting as a universal owner as well as potential fiduciary duty implications[9].

Further hurdles to building a consensus on universal ownership include personal and institutional inertia (Kiernan 2007), short-termism, and career risk (Urwin 2011). These are significant barriers for some, while other high-profile investors have fewer hesitations – perhaps because they have the freedom to do this due to their seniority.

Finally, consensus on universal ownership, to the extent it exists, is highly geographically constrained; funds in the Middle East and most Asian countries (with the

[7] CPPIB and CDPQ both publicly self-identified as universal owners many years ago, but it is unclear whether they still do.
[8] https://www.thinkingaheadinstitute.org/content/uploads/2024/03/FF-TAI_AOPS24_Summit-Showdeck_Website.pdf, pg. 16.
[9] Quigley (2025) argues that even the direct costs of acting as a universal owner may be lower than the costs of many ESG strategies, negating some fiduciary duty-related concerns.

significant exception of Japan) appear not to self-identify as universal owners, while many funds in Scandinavia and the Anglosphere do. It is unclear if universal ownership can ever claim true consensus if its reach remains concentrated in particular regions.

Indicators to Monitor: A rise in the number of asset owners self-identifying as universal owners, especially among the currently unrepresented geographies, would be an important signal as to the level of consensus universal ownership enjoys in the asset owner community. As the number of professed universal owners rises, coordination costs can be spread across a larger number of entities. Studies suggest that decreases in coordination costs tend to increase investors' willingness to undertake corporate governance interventions (Edmans and Holderness 2017); improved coordination would constitute a second indicator of a "consensus" among investors, as per McAdams' test. Table 1 data can be updated over time to reflect the adoption of universal ownership within the largest funds, while a broader look at trends in this regard could track the same indicator among a broader group of influential funds.

McAdams Norm Test Part II: Detection

The second part of McAdams' test is "detection" of whether a universal owner is acting in accordance with the theory. Detection is not just important in terms of norm formation; a fund's public activities ("field-building") represent a significant part of their impact on company behaviour through their influence on other investors and other actors (Fahlenbrach, Rudolf, and Wegerich 2023; Marti et al. 2023; Becht, Pajuste, and Toniolo 2023). It is unclear whether the "detection" condition can be satisfied fully; not all asset owners publicise voting records, and funds' bond and private equity portfolios are often confidential. Within the community of large institutional investors[10], however, funds' actions in alignment with

[10] The world's largest 100 asset owners represent a community of 1,000 to 2,000 senior people if the combined size of the average executive team and board ranges from 10-20 people per organisation.

universal ownership are likely to be at least somewhat known given the modest size of the community and the number of asset owner meetings and conferences they attend together on an annual basis[11].

Challenges: “Detection” is likely to be greater for those who have reason to be proud of their efforts; non-participation is less likely to be detected. There could be further asymmetries in the “detection” of asset owners’ actions; there are incentives to disclose only good things (greenwashing) or not to publicise good things (greenhushing) in light of the current ESG backlash and regulatory reforms that may render investors more cautious about making environmental and social claims. It may also be difficult to differentiate legitimately high-impact sustainable finance practices from those with little to no impact (Dupre, Bayer, and Santacruz 2020; Gilchrist et al. 2022).

Asset owners may also hesitate to publicise actions that deviate from the norm or engender career risk; again, evidence suggests that shame is more powerful than esteem for individuals (Casal and Mittone 2016; Alpízar and Gsottbauer 2015). This dynamic appears to be at play at the institutional level; firms respond more to negative external environmental ratings than to positive ones (Chatterji and Toffel 2010) and negative externalities are more likely to affect investors’ financial decision-making than their positive equivalents (Humphrey et al. 2021). If investors perceive publicity as entailing risk of stigma, this could have an inhibiting effect.

Indicators to Monitor: The degree to which universal owners publicise their actions is a good gauge in and of itself as to whether they are field-building. Tracking this could involve analysing mentions of universal ownership at key industry events such as the annual PRI in Person conference, on asset owners’ own websites and in press releases, as well as in industry publications such as Top1000Funds and IPE.

[11] These include the UN PRI, ILN, FCLT, ICPM, ICGN, and many more.

McAdams Norm Test Part III: Consensus and chance of detection widely known

Neither consensus nor chance of detection as regards universal ownership is as yet widely known; what is important to assess is the ease with which asset owners can learn about the rate of peers' self-identification as universal owners and their actions in accordance with this belief.

Survey results point to a stronger consensus on universal ownership in the asset owner community than is currently understood, suggesting that pluralistic ignorance – the erroneous belief among people with the majority view that they are in fact in the minority (Miller 2023) – may be at play. According to a survey of 26 large asset owners, 65% considered themselves to be universal owners[12], a statistic that may surprise the asset owner community. Pluralistic ignorance is an issue because the persistent false belief that a norm has *not* taken hold in the population can constrain the spread of the new norm (Prentice and Miller 1996) as well as the actions, collaboration, and rule-making that often accompany a norm's widespread adoption.

Regulatory regimes differ, and it is uncertain whether asset owners will be able to assess how many peer institutions self-identify as universal owners and whether they act in line with the theory. Disclosure regimes – such as TCFD or stewardship reporting – do not currently require investors to report specifically on their use of high-impact tactics such as voting against directors or applying environmental and social exclusions to the bond portfolio.

Challenges: Pluralistic ignorance is itself a significant barrier to the consensus and detection criteria becoming widely known. People are less likely to publicly self-identify as universal owners, and to ensure their high-impact actions are readily observable to peers, if they falsely believe they are in the minority. This issue is compounded by the fact that there is no common communications channel for all universal owners.

[12] https://www.thinkingaheadinstitute.org/content/uploads/2024/03/FF-TAI_AOPS24_Summit-Showdeck_Website.pdf, pg. 16.

Indicators to Monitor: Universal owners may usefully monitor whether peers contribute to common public databases regarding impact-oriented stewardship and asset allocation activities and/or publicly identify as universal owners in venues to which peers are likely to be exposed (media interviews, the PRI Collaboration Platform, etc.) and track whether such coverage disseminates the rate of asset owner self-identification as universal owners to dispel pluralistic ignorance.

Second Test: Marti & Gond

McAdams' framework addresses the formation of norms; Marti & Gond (2018) have observed the path of *self-fulfilling* theories in the financial realm, concluding:

> [G]etting to the stage of self-fulfilling theories involves three steps: First, new theories must motivate experimentation; in other words, they must prompt actors to explore new ways of doing things. Second, this experimentation must produce anomalies, which we define as observable events that violate widely shared expectations. Third, these anomalies must lead to a practice shift—that is, to changes in how most actors do things that confirm the new theories. (Marti and Gond 2018, 488)

The model includes six boundary conditions – two for each step – to explain which theories are more likely to become self-fulfilling:

> The first two boundary conditions—material devices and powerful initial backers—determine whether theories will lead to experimentation. The next two boundary conditions—visibility of effects and counteracting behavior—determine whether experimentation will produce anomalies. The last two boundary conditions—discontent with the status quo and sensegiving by convinced actors—determine whether anomalies will lead to a widespread shift in practices that is in line with the newly proposed theories. (Marti and Gond 2018, 488)

Marti & Gond Norm Test Part I: Motivating experimentation

In Step 1 of Marti & Gond's process model, "motivating experimentation", "material devices" and "powerful initial backers" are the two boundary conditions that help determine the likelihood that a norm will provoke experimentation.

Universal owners have an interest in having an impact on companies and the real economy. These funds' "material devices" will therefore be those most likely to have an impact on company behaviour as opposed to the most common ESG practices of public equity exclusions, tilts, or shareholder resolutions. Fixed income exclusions/tilts and director votes, as discussed in Section IV, constitute two important material devices to track as tools that are distinctly impactful and therefore in line with the universal ownership paradigm, although universal owners may deploy other material devices to meet their objectives. Table 2 displays the extent to which the largest 25 asset owners globally[13] are deploying fixed income tilts/exclusions and director votes on social and environmental issues:

Table 2[14]

Largest 25 Asset Owners	E&S Exclusions in Primary Market (Bonds)	Votes Against Directors on E&S Grounds
Government Pension Investment Fund	Unlikely	Likely Yes
Norges Bank Investment Management	Yes	Yes
China Investment Corporation	No	No
SAFE Investment Company	Unknown (no public annual report)	Unknown (no public annual report)
Abu Dhabi Investment Authority	Unlikely (no mention in annual report or on website)	Unlikely (no mention in annual report or on website)
Kuwait Investment Authority	Possible Partial Yes	No
National Pension Service (South Korea)	Partial Yes	Unclear
GIC Private Limited	Unlikely	No
Federal Retirement Thrift (FRTIB)	No	No
Public Investment Fund/Sanabil Investments	Unlikely	Unlikely
APG/ABP	Yes	Yes
California Public Employees	Yes	Yes
Qatar Investment Authority	Unclear	Unlikely
Canada Pension Plan	No	Yes
Central Provident Fund	Unlikely	Unlikely
National Social Security Fund (China)	Unlikely	Unlikely
Temasek Holdings	Unlikely	Unclear

[13] As ranked here: https://www.thinkingaheadinstitute.org/research-papers/the-asset-owner-100-2023/.
[14] See Appendix II for sources.

CDPQ	Yes	Yes
California State Teachers Retirement System	Yes	Yes
Mubadala Investment Company	Unlikely	No
PGGM	Yes	Yes
New York State Common	Yes	Yes
Investment Corporation of Dubai	No	No
New York City Retirement	Yes	Yes
Employees Provident Fund (Malaysia)	Unclear	Yes

The results are stark; among the 8 currently self-identifying universal owners, 7 include *both* material devices in their policies and/or public statements, while the largest fund – GPIF – appears to vote against directors through external managers. The two funds that identified as universal owners in the past, Canada Pension Plan (CPP) and CDPQ, make use of these material devices as well; CPP deploys votes against directors on environmental and social issues but does not apply exclusions across its portfolio, while CDPQ makes use of both material devices.

Of the 15 funds that have never publicly self-identified as universal owners, only one fund – Malaysia's Employees Provident Fund – clearly and publicly makes use of a material device (director votes). Two other funds – the Kuwait Investment Authority and South Korea's National Pension Service – may make partial use of environmental or social bond exclusions. The one OECD fund that has never identified as a universal owner, Federal Retirement Thrift, uses neither material device.

These results are unexpectedly divergent for self-described universal owners compared to large asset owner peers without such an identification. Universal owners appear to behave sharply differently, deploying these two high-impact material devices at a rate of 90%-93.8%[15] relative to 3.3%-17.6%[16] for non-universal owners in the same size bracket. The boundary condition of "material devices" appears to be met.

[15] Depending on whether one counts CPP and CDPQ, which self-identified as universal owners in the past.
[16] Depending on whether KIA and/or Korea's National Pension Service do in fact use one of the material devices, and on whether one counts CPP and CDPQ as non-universal owners.

As for powerful initial backers, this is the condition that has most clearly been met. The very largest and best-known among asset owners self-identify as such; universal ownership theory enjoys the high-profile support of the (now former) CIO of GPIF, the largest pension fund in the world,[17] and the second-largest universal owner, the Norwegian Government Pension Plan Global. Public documents from major global pension funds such as CalPERS and CalSTRS feature universal ownership, and smaller but well-known funds such as AP7, HESTA, the New Zealand Superannuation Fund, the UN Joint Staff Pension Fund, and USS identify as universal owners. These powerful initial backers reinforce the "detection" condition above, such that an action carried out by a highly respected investor is more likely to be "visible" (Marti and Gond 2018).

Challenges: Material devices can be expensive, especially they entail creating a new product or changing the approach to a whole asset class[18]. There is also a concern as to whether these material devices will work; Gosling (2024) doubts the effectiveness of debt exclusions as a tool for changing company behaviour, for example. Director votes could become less powerful as they are more frequently deployed, since the chief mechanism behind their efficacy is social opprobrium, or they could come to be viewed as a badge of honour in some quarters.

Free-riders are a natural concern where collective action benefits those who do not contribute. The very possibility of free-riding may decrease potential collaborators' willingness to work together. Broader collaborations may be a partial antidote; the more collaborators there are, the lower the average cost of action per collaborator and therefore the smaller the gap in benefits between collaborators and free-riders. With more collaborators representing a greater percentage of companies' ownership capital, success also becomes more likely. According to Hawley and Williams (2000, 55), furthermore, the free-rider issue "is mitigated to some extent

[17] https://www.sbs.ox.ac.uk/events/hiro-mizuno-investors-have-pay-attention-whole-system.

[18] This is lessened with director votes; it is often just as expensive to oppose a director's (re-)election than to support it. There may be additional costs associated with analysis, communications, and coordination, however.

for large institutional owners because the absolute size of their holdings may be sufficient to justify action even if most of the benefit accrues to other institutions”. This was the case for the New York City pension funds’ “Boardroom Accountability Project”, the first phase of which added an estimated 53 basis points to the returns of target companies (Bhandari, Iliev, and Kalodimos 2021), which in turn conferred on the NYC pension funds excess returns of 266 million USD and a much larger excess return of 25 billion USD for other market participants (Lukomnik and Hawley 2021). Because the financial benefit of the initiative was greater than the resources expended on it, even if most of the benefit went to other investors, it was worth it for the NYC pensions to do this work.

Indicators to Monitor (Material Devices): Actions that are truly in line with universal ownership theory will target concrete outcomes that reduce systemic risks; in other words, they will be impact-oriented. As discussed in Section IV, two investor impact tactics identified in the literature are a) exclusions applied to the fixed income portfolio, where the impact is likely to be greater relative to public equity exclusions (Quigley 2023), and b) votes against the re-election of directors, which the evidence suggests are more likely to change company behaviour than shareholder resolutions and other public equity shareholder engagement tools (Del Guercio, Seery, and Woidtke 2008; Aggarwal, Dahiya, and Prabhala 2019; Liu et al. 2020; Ertimur, Ferri, and Oesch 2017). These two tactics are reasonable indicators of universal owners’ willingness to act in accordance with the theory; they measure two of the primary ways in which universal owners can have an impact on systemic risks, not just attempt to avoid them through clever stock-picking.

These two measures also have the benefit of isolating other variables. Even experienced investors often fail to recognise the difference between the impact on the company in those two cases (Dupre, Bayer, and Santacruz 2020; Gilchrist et al. 2022), so universal owners are unlikely to receive more acclaim for their bond exclusions relative to their equity exclusions.

As regards director votes, universal owners are *less* likely to gain a public relations benefit from votes against directors relative to votes in favour of shareholder resolutions; of the 9 best-known reports on environmental and social shareholder voting from 2022 onwards, 6 cover shareholder resolutions only while just 3 cover director votes at all:

Table 3

Year Analysed	Publication Name/Date	Coverage of E&S Issues	Number of Asset Managers	Number of Companies/ Resolutions
2024	Harvard Law School Forum on Corporate Governance: 2024 Proxy Season Review: Corporate Resilience in a Polarized Landscape, October 2024	Shareholder resolutions	Big 2 Asset Managers (BlackRock & Vanguard)	344 E&S shareholder resolutions
2023	ShareAction: Voting Matters 2023, January 2024	Shareholder resolutions	69 Asset Managers	257 E&S resolutions
2023	Reclaim Finance: Climate Votes: The Great Deception, December 2023, December 2023	Shareholder resolutions & director votes	30 Asset Managers	75 companies (climate-related director votes); 22 climate-related shareholder resolutions
2023	Majority Action: Climate in the Boardroom 2023, November 2023	Director votes	16 Asset Managers	17 companies (climate-related director votes)
2023	Influence Map: Asset Managers & Climate Change 2023, August 2023	Shareholder resolutions	45 Asset Managers	68 climate-related resolutions
2023	Harvard Law School Forum on Corporate Governance: Proxy-Voting Insights: How Differently Do the Big Three Vote on ESG Resolutions, July 2023	Shareholder resolutions	Big 3 Asset Managers (BlackRock, State Street, & Vanguard)	100 ESG resolutions
2020-2023	Harvard Law School Forum on Corporate Governance: Proxy Voting Insights: Key ESG Resolutions, October 2023	Shareholder resolutions	Big 3 Asset Managers (BlackRock, State Street, & Vanguard)	337 E&S resolutions
2022	ShareAction: Voting Matters 2022, November 2022	Shareholder resolutions	68 Asset Managers	252 E&S resolutions
2022	Majority Action: Climate in the Boardroom, November 2022	Director votes	20 Asset Managers	61 companies (climate-related director votes)

Information available on environmental and social shareholder resolutions covers substantially more asset managers and votes than director votes. There are no equivalent analyses for asset owners that cover multiple geographies[19], reporting from individual pension funds typically does not include totals for director votes on environmental or social issues, some asset owners do not disclose names of external managers to facilitate assessments against the reports listed in Table 3, and some disclosed asset managers may not appear on the list anyway. For any but the most transparent asset owners, it would be difficult even to discern their voting records on shareholder resolutions, let alone director votes.

It is therefore no more observable whether a universal owner applies exclusions to bonds as opposed to equities, and it is less observable when a universal owner votes against directors as opposed to voting in favour of shareholder resolutions. The public relations benefit to undertaking these actions is equal to or less than the benefit of undertaking less impactful actions, and they are therefore reasonable indicators as to whether a universal owner is seeking to have an impact on companies' externalisation of environmental and social costs. Future research could assess universal owners against these indicators to determine the extent to which they are acting in accordance with universal ownership theory.

Indicators to Monitor (Powerful Initial Backers): The main indicator to monitor for this boundary condition is universal owners' public self-identification. To encompass "powerful initial backers", this analysis should include the proportion of the most well-known funds – and the seniority of representatives – that self-identify as universal owners.

Marti & Gond Norm Test Part II: Experimentation leading to anomalies

Whether experimentation leads to anomalies depends on two boundary conditions: visibility of effects and counteracting behaviour. The "anomalies" Marti and Gond refer to "violate widely shared expectations" – they have a different effect from those of the ESG tools

[19] Shift analysed three international comparators in its analysis of Canadian pension funds (https://www.shiftaction.ca/news/2024/6/27/did-your-pension-manager-vote-for-better-climate-disclosure) and the Sierra Club's analysis covers US state pensions only (https://www.sierraclub.org/sites/default/files/2024-01/Hidden-Risks-State-Pensions-Report.pdf), but there is no equivalent of the Table 3 reports for asset owners.

and tactics to which investors are accustomed. We would expect greater effects on cost of capital and company behaviour from bond exclusions and director votes based on the evidence to date, as per Section IV, but neither of these tools has been used enough to judge whether they will generate substantial anomalies relative to ESG tools such as shareholder proposals and public equity exclusions/tilts. The partial exception to this is the case of gender composition of company boards, a campaign that became substantially more effective when investors announced that they would vote against directors (Gormley et al. 2023).

The "visibility of effects" condition echoes that of McAdams' "detection" above. These concepts examine the degree to which the results of norm entrepreneurs' experimentation become widely known. The salience of a norm may trigger its own feedback loop; the more familiar one is with something, the more likely one is to view it positively. In social psychology this is known as the "mere-exposure effect" (Bornstein 1989; Montoya et al. 2017). In one comical case, a student came to class shrouded in a large black bag for two months. At first he was met with hostility, then curiosity and, finally, fondness as his fellow students warmed to his presence (Zajonc 1968). The mere-exposure effect works for concepts, too; "[a] reliable way to make people believe in falsehoods is frequent repetition, because familiarity is not easily distinguished from truth" (Kahneman 2011, 62); universal ownership is more likely to gain acceptance simply through repeated mention – especially by "powerful initial backers".

"Counteracting behaviour" would be reasonable to expect given the anti-ESG backlash in conservative US states, since universal ownership often focuses on the same general topics (environmental and social risks). Because universal ownership's material devices are more likely to change market conditions than their ESG equivalents, further attempts at counteracting behaviour could occur, particularly from regions likely to feel the effects (e.g., top energy-exporting countries and China). For example, if universal owners raise high-emissions firms' cost of capital by declining to participate in new bond issues, opportunistic investors in the shunned firms may be rewarded with higher returns. Given institutional investors' dominance of the bond market and the feedback loops that can be triggered, such attempts to counteract universal owners' practices may or may not succeed. For example, if enough universal owners apply exclusions to shift the size of companies' bond issuances, the composition of bond indices could change (because smaller issues would occupy a smaller proportion of the index), with companies receiving less auto-allocated capital from bond index investors who may not share universal owners' concerns – a feedback loop in favour of universal owners' actions.

Universal owners are also important clients to other financial sector actors; these actors risk the loss of business if they fail to cooperate with universal owners regarding sensible risk-mitigation matters. Rogue counter-actors would have to believe the risk was real, however.

Finally, in the event of a high-profile battle between universal owners and alpha-focused actors, the weight of government may fall on universal owners' side because of their role in national economies[20]; they often represent the savings of large swathes of the citizenry. These countries may find it easier to deploy legislation and regulation that aligns with the wishes of domestic universal owners. Lawmakers legislate knowing there is a risk to large pension funds for which government may ultimately be responsible. It helps if they can do so knowing that the universal owners are already free of bond holdings in the sectors most requiring legislation and regulation. With such legislation and regulation, universal owners can take credit for having made a smart move in the first place, reinforcing the legitimacy of these material devices.

In some countries, however, governments may subsidise or otherwise prop up domestically important companies that have attracted the ire of universal owners. It is unclear whether counteracting behaviour would occur in response to new material devices and whether this would reinforce or diminish the impact of universal owners' actions.

[20] Institutional investors own 55% of the top 10,000 listed companies; assets held by pension funds alone represent over half of GDP in OECD countries (De La Cruz, Medina, and Tang 2019).

Challenges: The chief concern surrounding the "visibility of effects" boundary condition is that lip service will take the place of action. This is a particular worry given the prevalence of ESG greenwashing (Kim and Yoon 2022; Baldi and Pandimiglio 2022) and the focus on transparency as opposed to changes in practice (Doan and Sassen 2020).

Some forms of counteracting behaviour could genuinely constrain the development of universal ownership as a norm. Common ownership – and its reportedly uncompetitive effects – has been advanced as a critique of diversified investors (Azar, Schmalz, and Tecu 2018; Antón et al. 2023), although these studies examined large asset managers, not asset owners/universal owners and the findings are disputed (Lewellen and Lowry 2021). Relatedly, anti-trust concerns have risen up the agenda for asset owners in the wake of U.S. ESG backlash (Hearn, Hanawalt, and Sachs 2023). Common ownership and antitrust concerns could attract scrutiny from regulators and inhibit universal owners' tendency to cooperate.

Counteracting behaviour could make capital flows harder to track, since bond markets are generally more opaque than equity markets, and any assets or companies that go private could be difficult to trace. However, many bonds are issued by large listed companies for which information is public, and private assets are ultimately also often owned by asset owners[21] who can monitor their trajectory. Companies that go private likely remain in the supply chains of large corporates that universal owners can influence anyway.

Indicators to Monitor (Visibility of Effects): The clearest anomaly from universal owners' experimentation would be changes in bond size or pricing. When companies face a lack of lender enthusiasm to the extent that it leads to project downsizing, visibility can be high. Adani's Carmichael coal project in Australia shrank to a sixth of its proposed size due to a lack of debt financing (Curran 2020), which attracted significant media attention[22].

[21] https://www.privateequityinternational.com/global-investor-ranking/.
[22] E.g., https://www.ft.com/content/bc6ca364-9d1e-43e6-ad1f-d0e44be4f0ea, https://www.nytimes.com/2018/11/29/world/australia/adani-coal-mine.html.

Results of director votes are highly visible, and Vote No campaigns request proof of implementation. Implementation rates are important to track against implementation rates of comparable shareholder proposals, which are typically low.

Indicators to Monitor (Counteracting Behaviour): The first strand of bond market experimentation to monitor is the proportion of cost-externalising companies' bonds that end up in the hands of hedge funds or in the shadow banking sector. This is the flip side of one indicator for material devices: how many universal owners exclude problematic companies' bonds. If these holdings are transferred to less scrupulous actors without effects on size or cost of capital, the counteracting behaviour will swamp evidence of any anomaly.

The second strand tracks the political economy response to these exclusions. Evidence finds non-financial impacts associated with fossil fuel divestment announcements (Schifeling and Hoffman 2019; Blondeel, Colgan, and Van de Graaf 2019; Becht, Pajuste, and Toniolo 2023); such stigmatisation is an important precursor to legislation (Coplan 2016). The more fossil fuel assets concentrate in parts of the financial system that are unregulated or underregulated, the greater the pressure to bring these institutions under the auspices of financial regulatory regimes. An important indicator to monitor is therefore regulatory changes in the domains affected by universal owners' experimentation.

Director votes are difficult to counteract directly. Most directors receive well over 90% of the vote (Cai, Garner, and Walkling 2009); counteracting actors cannot do more than to vote in favour of the directors they have already been supporting. An important indicator to monitor is whether high levels of dissent come to be viewed as badges of honour by targeted directors – as measured by public statements or decreasing impact from investor dissent.

Marti & Gond Norm Test Part III: Widespread shift in practices

Universal ownership has not yet reached the point at which it has led to shifts in practice across the entire asset owner community. However, the boundary condition of "discontent with the status quo" is well-established in the general population as well as among pension beneficiaries. Public polling in many countries finds that citizens are overwhelmingly supportive of efforts to counter climate change (European Commission 2023; European Investment Bank 2023; United Nations Development Programme 2021), inequality (Horowitz, Igielnik, and Kochhar 2020; Peiris and Samarasinghe 2023), and biodiversity loss (YouGov, Corporate Justice Coalition, and Friends of the Earth 2024; Defenders of Wildlife 2023), among other systemic risks. One may consider the United Nations Sustainable Development Goals – unanimously adopted by 193 countries (United Nations 2015) – evidence of a global consensus on these issues. Surveys and experiments conducted among pension beneficiaries and other individual investors find support for investing in line with social and environmental values (Bauer et al. 2021; Bonnefon et al. 2022; Dupre, Bayer, and Santacruz 2020; Heeb et al. 2022; Riedl and Smeets 2017; Barber, Morse, and Yasuda 2021). Investment staff are no different on the issue of climate change; most feel it is a significant risk that is already affecting their portfolios (Krueger, Sautner, and Starks 2020).

As the polycrisis manifests itself amidst worsening climate change, biodiversity loss, pandemic risk, and social dissolution, and as evidence of the ineffectuality of ESG grows, a greater proportion of financial actors may join beneficiaries and the public in meeting the boundary condition of "discontent with the status quo", which helps determine whether practice will change in line with universal ownership theory.

Marti & Gond's remaining boundary condition, "sensegiving by convinced actors", helps observers to interpret anomalies as the result of experimentation in line with the new norm. Sensegiving involves explanations of the mechanics and purpose of universal ownership – not just mentions.

Challenges: The main risk associated with discontent with the status quo is that this discontent interferes with the legitimacy of the entities equipped to address it. Inequality is linked to decreasing trust in democratic institutions and social discord more generally (Foa et al. 2020; Wilkinson and Pickett 2017). Universal owners could find that the task of countering environmental and social risks has become infeasible, or that they have lost the legitimacy to do so; discontent could flip from being an enabler of universal ownership's development into a norm to a barrier to that process.

Universal owners may not be viewed as legitimate actors given their lack of democratic oversight. They could be accused of crowding out government action. Finally, they could endure critiques for failing to protect vulnerable populations, those least likely to fall into the category of risks to diversified portfolios, further eroding universal owners' moral authority.

Sensegiving, on the other hand, could be overtaken by asset managers, who do not have the right incentives and remuneration structures to act in line with the wishes of their universal owner clients. Conflicts of interest have been found in financial sector firms' voting behaviour (Del Guercio, Genç, and Tran 2018; CvijanoviĆ, Dasgupta, and Zachariadis 2016), including "own-industry bias" (Keswani, Stolin, and Tran 2016), which could impede any ability to put pressure on banks and insurers contributing to systemic risks.

Indicators to Monitor (Discontent with the Status Quo): Barring the extreme scenarios discussed above, growing discontent with the status quo in relation to systemic environmental and social risks will tend to help universal ownership become established as a norm. Discontent can be measured through survey results among the general public as well as pension beneficiaries and other stakeholders. Discontent in the field of sustainable finance can be measured by the increasing abandonment of ineffective ESG tactics such as public equity tilts or shareholder resolutions.

Indicators to Monitor (Sensegiving by Convinced Actors): Sensegiving goes beyond public mentions of the concept of universal ownership. It will be important to track the number of explanations of the mechanics and purpose of universal ownership – and material devices – by senior asset owner representatives in public fora (e.g., at conferences, in speeches and articles, and during media appearances).

V.III Extending the Norm Formation Tests

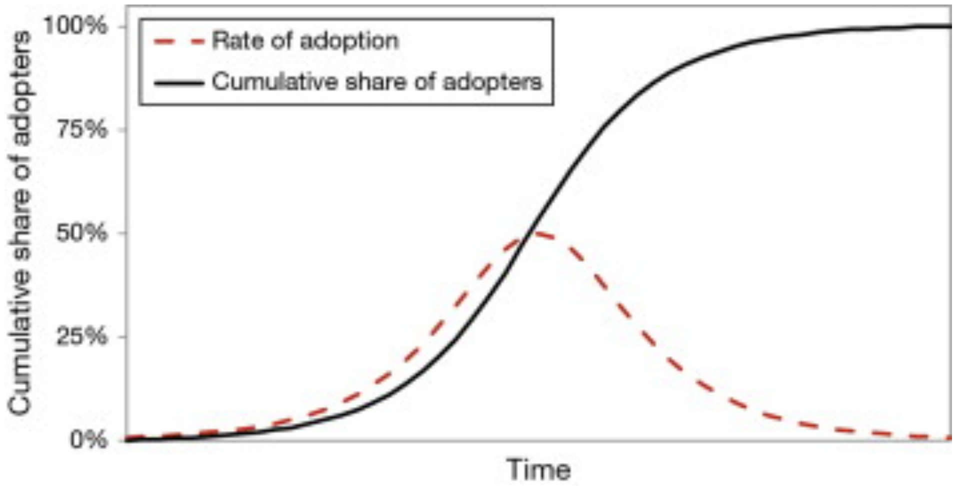
Finally, this paper proposes a "velocity" factor and the concept of "norm accelerants" to add to the McAdams and Marti & Gond frameworks. The velocity factor assesses the speed at which a norm takes hold and therefore the likelihood that it will do so and the extent to which it becomes self-reinforcing. The concept of "norm accelerants" explains why particular "powerful initial backers" and "sensegiving by convinced actors" are such important elements of the Marti & Gond model.

Social psychology research suggests that making study participants aware of the prevailing social norm can prompt adherence to the norm[23]; emphasising that the norm is *increasing* in popularity significantly improves participants' adherence (Milkman et al. 2021). Implying there is *momentum* – a "trending norm" – can change behaviour even if the behaviour is still only being performed by the minority (i.e., it is not yet a norm) (Mortensen et al. 2019; Sparkman and Walton 2017).

[23] Unless the norm is considered dispiritingly out of reach, as Milkman et al (2021) discovered in a megastudy on gymgoers.

An “S-curve” (see Figure 1) describes the pattern by which “early adopters” slowly begin using a new innovation, followed by a faster adoption rate among the middle segment of the population and finally a slower rise towards adoption by laggards.

Figure 1: Rate and share of adopters of new innovations



Source: Fleiter & Plötz (2013).

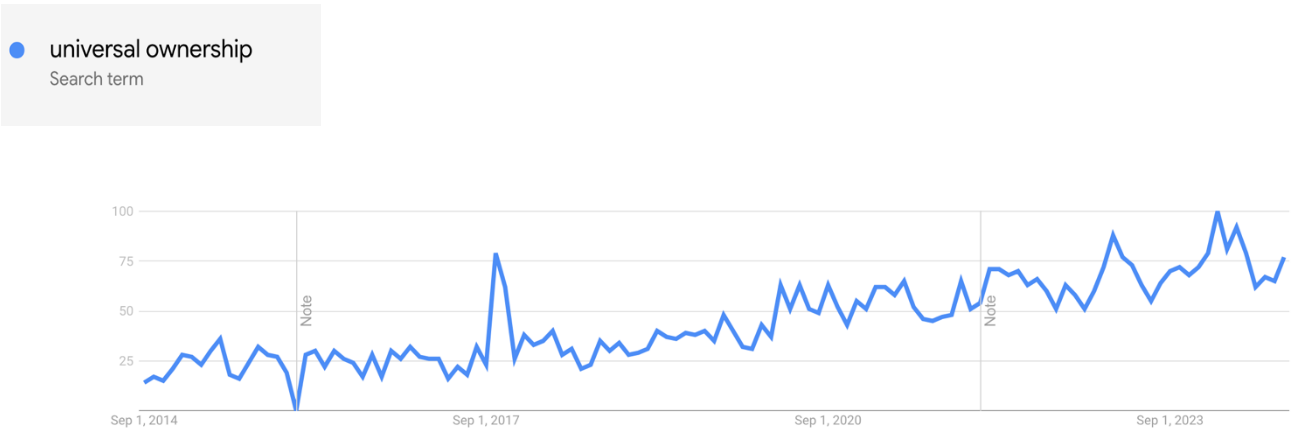
The “velocity” factor determines where a norm is on the S-curve and the extent to which it is likely to take hold; it is after the “powerful initial backers” phase that the speed of adoption by the majority speeds up considerably.

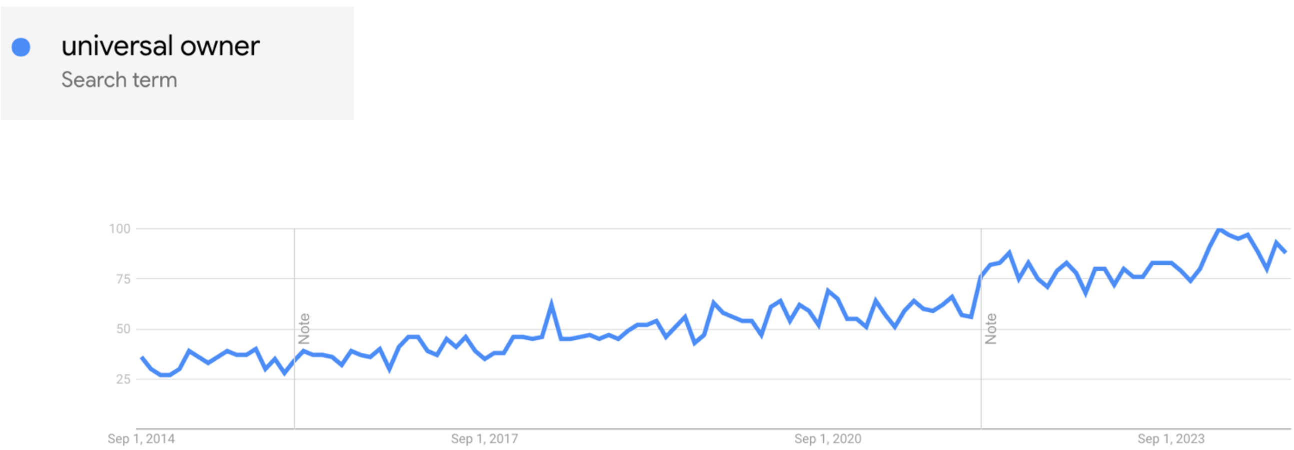
Feedback mechanisms are an important part of the norm formation process. McAdams describes the growing social discomfort among those who have not yet adopted a trending norm, while Marti & Gond discuss the process of experimentation producing results that then reinforce the new norm. The “mere exposure effect” is the process by which repeated exposures to an idea make people more inclined towards it as it becomes familiar.

The speed of evolution appears to correlate with the size of the “committed minority” of early adopters; once they represent 10% of the population, the speed of adoption increases substantially (Xie et al. 2011). At 25% the minority view can tip to the majority quickly under experimental conditions (Centola et al. 2018).

With 8-10 of the largest 25 asset owners (32-40%) self-identifying publicly as universal owners, universal ownership exceeds both thresholds, albeit with substantial regional variation. Future research could determine the proportion of the largest 100 or 200 asset owners who self-identify as universal owners and whether it exceeds the norm adoption threshold of 25%, and the velocity of this change.

An emerging norm's velocity could be tracked through online searches, news articles, and academic journals. Google trends searches for "universal ownership" and "universal owner" over the past 10 years find a steady increase in online searches, but without much difference in the rate of change, suggesting universal ownership has not yet reached the rapid adoption phase:





Finally, this paper proposes the concept of "norm accelerants" as distinct from "norm entrepreneurs" (conscious cultivators of new norms). "Norm accelerants" are legitimate, mainstream actors or organisations whose conscious or unconscious adoption of a norm legitimises it in the minds of the majority, accelerating the norm's "velocity" as it advances through the "s-curve" to broad acceptability. In the financial sector, norm accelerants could be famous investors or academics, or institutions representing pension trustees, treasurers, or continuing education for investors. "Norm accelerants" are can more easily achieve visibility, a key component of McAdams' and Marti & Gond's frameworks, helping address the "pluralistic ignorance" that may dampen the velocity of universal ownership as a norm.

The likelihood that a norm can emerge and become self-reinforcing can be assessed partly on the basis of the norm's "velocity" – whether it is accelerating rapidly through the majority of the population or whether it remains in the domain of early backers. "Norm accelerants", some of whom may be "powerful initial backers" and "sensegiving actors", can speed the velocity of a norm and therefore the likelihood that it takes hold.

VI. Discussion and Conclusion

Systemic vulnerabilities have increased in recent years. Myriad global risks – climate change, biodiversity loss, pandemic risk, inequality, and geopolitical tensions – appear to be worsening. Universal owners are in a unique position to act at this scale, given their global scope and ownership of companies whose operations span jurisdictions. Indeed, universal owners' fundamental interest is in mitigating system-wide risks to their long-term prosperity – in averting the polycrisis.

This paper has examined the extent that universal ownership has taken hold as a financial sector norm and analysed its potential to become self-reinforcing, assessing the concept against two norm frameworks including the challenges and indicators to monitor. Drawing from the analysis from previous sections, Table 4 summarises the factors determining whether and how universal ownership theory could satisfy each of McAdam's norm formation steps and Marti & Gond's boundary conditions for self-fulfilling theories, including a) indicators as to whether a universal owner is behaving in accordance with the theory; b) challenges related to each factor, boundary condition, or indicator to gauge the extent to which universal ownership theory faces resistance; and c) the rate of velocity of norm development.

Table 4

Factor/boundary condition	**Indicators**	**Challenges**	**Velocity Factor**
McAdams: Consensus	• Number of asset owners publicly identifying as universal owners • Increased coordination among universal owners	• Lack of evidence of detailed portfolio costs from systemic risks • Perceived cost/risk and fiduciary duty • Inertia • Short-termism • Career risk • Geographically limited consensus	• Rate of increase in asset owners' self-identification as universal owners • Rate of increase in a) coordinated engagements and b) asset owners supporting them • Number of "norm accelerants" contributing to discourse
McAdams: Detection	• Universal owners publicising impact	• Greenwashing/ greenhushing • Jargon • Fear of stigma or career risk	• Rate of increase in publicising actions
McAdams: Consensus and detection widely known	• Universal owner self-identification, including rates of self-identification, that peers see	• Pluralistic ignorance • No common communications channel	• Rate of increase in media/database mentions, including of "norm accelerants"
Marti & Gond: Motivating experimentation	• Material devices: Number of funds engaging in a) fixed income exclusions and b) votes against directors on environmental/social grounds • Powerful initial backers: Number of influential asset owners that identify as universal owners	• Expense of material devices • Efficacy of material devices • Free-riders	• Rate of increase of funds a) applying fixed income exclusions and b) voting against directors • Number of "norm accelerants" discussing these as legitimate tactics and/or taking part
Marti & Gond: Experimentation producing anomalies	• Visibility of effects: Change in bond pricing or issue size; Vote No implementation rate relative to comparable shareholder resolutions	• Lip service • Capital flows harder to track and regulate • Loss of hope (e.g., climate change)	• As above: rate of increase in these indicators

	• Counteracting behaviour: Percentage of target bonds held by amoral investors; regulatory/ legislative counter-responses; positive spin on dissent votes		
Marti & Gond: Anomalies leading to shifts in practice	• Discontent with status quo: Polling/survey finding discontent among the public/financial actors; substitution of standard ESG tactics • Sense-giving by convinced actors: Public explanations of universal ownership by senior asset owners	• Discontent goes too far; universal owners lack democratic legitimacy; crowding out government action; failing to protect vulnerable populations • Risk of sensegiving by non-universal owners	• Rate of shift in polling/survey; speed of change in use of ESG vs universal owner tools; rate of increase in senior universal owners publicly explaining universal ownership

The assembled indicators, challenges, and velocity factors form a picture of the acceptability of, and momentum behind, universal ownership as a norm over time.

The "consensus" and "powerful initial backers" conditions are increasingly being met. With 32-40% of the world's largest 25 asset owners publicly self-identifying as universal owners, and near-consensus among the OECD funds, universal ownership may already have met and surpassed the low and medium thresholds identified in the norm formation literature: 10% (Xie et al. 2011) and 25% (Centola et al. 2018). The largest and best-known asset owners self-identify as universal owners, suggesting that "powerful initial backers" is the boundary condition that has most clearly been met. It is unclear whether the challenges identified are likely to slow or reverse the trend, and whether counteracting effects could obscure the impact of universal owners' material devices.

The boundary condition of "material devices" yields perhaps the most surprising results in this analysis. The findings from Table 3 suggest that universal owners' use of two powerful "material devices" – voting against company directors and corporate bond exclusions – is dramatically higher than the funds in the sample that do not self-identify as universal owners (90%-93.8% compared to 3.3%-17.6%), suggesting that a universal ownership mindset is linked to funds' deployment of high-impact tactics to reduce real-world environmental and social risks. These tactics can be less visible than some of the less effective ESG tools – e.g., shareholder proposals and public equity exclusions – which suggests that universal owners engage in these practices without necessarily expecting public recognition, and that the spread of these tactics could suffer from the lack of reinforcing mechanisms that come with "detection" or "visibility," a feature of the norm formation frameworks examined here.

Despite this, the normative actions of universal owners have already affected public discourse and the social acceptability of the fossil fuel sector, for example (Schifeling and Hoffman 2019; Blondeel, Colgan, and Van de Graaf 2019; Becht, Pajuste, and Toniolo 2023), and such stigmatisation lays the groundwork for legislative change (Coplan 2016).

Finally, the paper proposes the addition of the condition of "velocity" to the norm formation literature, capturing the role momentum plays in the likelihood of a concept's development into a self-reinforcing norm. It also proposes the concept of "norm accelerants" – actors and institutions that occupy the middle of the normative spectrum and who therefore project legitimacy when reinforcing a new norm. These "norm accelerants" can speed up the velocity of a norm's adoption, making it more likely to take hold. Future research could usefully examine the speed of change in universal owners' self-identification practices and their use of material devices, as well as the mainstream "norm accelerants" contributing to the visibility of universal ownership and the use of high-impact material devices.

As for whether universal ownership is likely to take hold as a financial sector norm and seed the "double hermeneutic" to reinforce its own normative power, the results are not yet conclusive. There are no tests or boundary conditions the theory manifestly fails to meet, however. Given hints at shifts in social norms that could be conducive to system-wide risk mitigation, asset owners may be able to engage in a conscious process of transforming universal ownership into a self-fulfilling theory, thereby helping to mitigate the burgeoning global polycrisis.

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APPENDIX I: SOURCES FOR TABLE 1

Largest 25 Asset Owners	Self-Described Universal Owners
Government Pension Investment Fund	Yes[24]
Norges Bank Investment Management	Yes[25]
China Investment Corporation	No
SAFE Investment Company	No
Abu Dhabi Investment Authority	No
Kuwait Investment Authority	No
National Pension (South Korea)	No
GIC Private Limited	No
Federal Retirement Thrift (FRTIB)	No
Public Investment Fund/Sanabil Investments	No
APG/ABP	Yes[26]
California Public Employees	Yes[27]
Qatar Investment Authority	No
Canada Pension Plan	Yes (no recent public statements)[28]
Central Provident Fund	No
National Social Security Fund (China)	No
Temasek Holdings	No
CDPQ	Yes (no recent public statements)[29]
California State Teachers Retirement System	Yes[30]
Mubadala Investment Company	No
PGGM	Yes[31]
New York State Common	Yes[32]
Investment Corporation of Dubai	No
New York City Retirement	Yes[33]
Employees Provident Fund	No

[24] https://www.gpif.go.jp/en/performance/annual_report_fiscal_year_2023.pdf, pg. 78.
[25] https://www.nbim.no/en/publications/our-views/2024/responsible-corporate-policy-engagement/
[26] ABP, APG's owner and main client, considers itself a universal owner: https://www.abp.nl/content/dam/abp/documenten/beleggen/abp-sustainable-responsible-investment-policy.pdf (pg. 3)
[27] https://www.calpers.ca.gov/page/investments/sustainable-investments-program/financial-markets
[28] See https://www.cppinvestments.com/wp-content/uploads/migrated/documents/734/2006_06_Pres_Public_Meetings_VTE7a9i.pdf from 2006; no more recent public reference can be found other than, reportedly, the Chair of the Board referring to CPPIB as a "universal investor" during a public meeting and webcast in 2012 (see pg. 70: https://www.academia.edu/4507885/Cain_MINES_VERSUS_CIVIL_SOCIETY_THE_ANTI_MINING_MOVEMENT_IN_HONDURAS_AND_CANADA).
[29] See https://www.cdpq.com/sites/default/files/medias/pdf/en/ra/ra2006_rapport_annuel_en.pdf, pg. 10, from 2006; there are no public documents identifying CDPQ as a universal owner since.
[30] https://www.calstrs.com/files/6389294e1/INV+082022+Item+03b.00+-+ExSum+-+Net+Zero+First+Year+Progress+and+Planning+Update.pdf
[31] https://www.pggm.nl/media/tshe3tvy/pggm-policy-paper-corporate-governance.pdf
[32] https://www.sec.gov/comments/s7-23-19/s72319-6744029-207892.pdf
[33] See https://comptroller.nyc.gov/newsroom/statement-from-nyc-comptroller-lander-on-unacceptable-climate-pullback-by-blackrock-jpmorgan-asset-management-state-street-global-advisors/.

APPENDIX II: SOURCES FOR TABLE 2

Largest 25 Asset Owners	Exclusions Apply to Primary Market (Bonds)	Votes Against Directors on E&S Grounds
GPIF (Japan)	Unlikely[34]	Likely Yes[35]
Norges Bank (Norway)	Yes[36]	Yes[37]
China Investment Corporation	No[38]	No[39]
SAFE Investment Company	Unknown (no public annual report)	Unknown (no public annual report)
Abu Dhabi Investment Authority	Unlikely (nothing in annual report/website)[40]	Unlikely (nothing in annual report/website)
Kuwait Investment Authority	Possible Partial Yes[41]	No[42]
National Pension Service (South Korea)	Partial Yes[43]	Unclear[44]

[34] GPIF expects bond managers to adhere to the Stewardship Principles (https://www.gpif.go.jp/en/investment/Stewardship_Activities_Report_2022-2023.pdf, pg. 43), join the UN PRI (https://www.gpif.go.jp/en/investment/Stewardship_Activities_Report_2022-2023.pdf, pg. 11), and submit critical ESG issues (https://www.gpif.go.jp/en/investment/20230420_esg_issues_en.pdf). "GPIF conducts ESG activities not only for equities but also for other asset classes, including bonds and alternative assets" (https://www.gpif.go.jp/en/performance/annual_report_fiscal_year_2023.pdf, pg. 78). GPIF's PRI submission (https://ctp.unpri.org/dataportalv2/transparency), section OO 13, says it incorporates ESG in manager selection and monitoring, including active and passive fixed income. In OO 18, however, GPIF only listed 9 ESG equity indices and a modest allocation to green bonds and similar; in PGS 37 GPIF did not select "Divesting" and "Not Investing" among managers' fixed income escalations; and in SAM 13 GPIF did not select that it or its fixed income managers monitor "Whether the results of stewardship actions were fed back into the investment process and decisions" or "The deployment of their escalation process in cases where initial stewardship efforts were unsuccessful". Finally, there were no fixed-income ESG funds listed in the annual report (pg. 102), while several equities ESG indices or funds were (pp. 102-4). It appears unlikely that GPIF applies exclusions to bonds.

[35] Due to legislation, GPIF outsources voting to managers. Its stewardship policies do not say if managers use director votes on E&S issues (https://www.gpif.go.jp/en/investment/policy_to_fulfill%20stewardship_2020.pdf (https://www.gpif.go.jp/en/investment/pdf/stewardship_principles_and_proxy_voting_principles.pdf). However, its PRI submission (https://ctp.unpri.org/dataportalv2/transparency), PGS 36, says managers oppose directors, including board chair or lead independent director. GPIF hires "Engagement-enhanced Passive" managers, tracks engagement plans, and states "GPIF will renew the contract based on this result" (https://www.gpif.go.jp/en/performance/annual_report_fiscal_year_2023.pdf, resulting in relatively high levels of director opposition, pp. 45-47. Almost all of its managers vote against directors on environmental or social issues (e.g., https://www.capitalgroup.com/content/dam/cgc/tenants/apac/documents/jp-proxy-voting/global_proxy_voting_policy_2024.pdf, pg. 1; https://www.am-one.co.jp/english/information/voting/; https://www.nomura-am.co.jp/special/esg/pdf/vote_policy.pdf?20241101, pg. 6). GPIF's proxy voting via asset managers likely includes votes against directors on environmental or social grounds.

[36] https://www.regjeringen.no/contentassets/9d68c55c272c41e99f0bf45d24397d8c/2022.09.05_gpfg_guidelines_observation_exclusion.pdf, pg. 2; https://www.nbim.no/en/responsible-investment/ethical-exclusions/.

[37] https://www.nbim.no/contentassets/34530895f32743a0a9528d6e55b73f6d/global-voting-guidelines-2023.pdf, pg. 11.

[38] https://www.nolasummers.com/chinainven/xhtml/Media/2022EN.pdf, pg. 45, shows green bonds only.

[39] No mention of voting in the most recent annual report (linked in previous footnote).

[40] https://www.adia.ae/en/pr/2022/index.html and https://www.adia.ae/en/purpose/responsible-long-term-investing/case-studies/sustainable-investing.

[41] It is unclear whether KIA applies other social or environmental screens, but it does not invest in gambling or alcohol, and this presumably applies across all asset classes: https://www.kia.gov.kw/wp-content/uploads/2022/11/ISFWF-Santiago-Principles-Self-Assessment-KIA-2022.pdf (pg. 9).

[42] There is no mention of E&S issues in KIA's documents aside from the mention of gambling and alcohol.

[43] Its PRI report (https://ctp.unpri.org/dataportalv2/transparency), OO 13, says ESG is included in its active fixed income manager selection process, and in SAM 9 it says its managers undertake some ESG integration in active fixed income holdings. However, section OO 5 shows that a minority of the fixed income portfolio is managed externally. The Fund reports ESG integration in domestic corporate fixed income only; see https://fund.nps.or.kr/html/download/fund/2022%20NPF%20Responsible%20Investment%20&%20Governance%20Report.pdf, pg. 7; reporting is also now required of domestic external managers, pg. 12.

[44] A 2023 policy change allows opposing directors on climate and safety grounds in domestic equities (pg. 16), but these are not among the reasons for "no" votes (pg. 26). Its PRI report, PGS 36, says that it or its managers have voted against the re-election of directors, but not the chair.

GIC Private Limited	Unlikely[45]	No[46]
Federal Retirement Thrift	No[47]	No[48]
Public Investment Fund/Sanabil Investments	Unlikely[49]	Unlikely[50]
APG/ABP	Yes[51]	Yes[52]
California Public Employees	Yes[53]	Yes[54]
Qatar Investment Authority	Unclear[55]	Unlikely[56]
Canada Pension Plan	No[57]	Yes[58]
Central Provident Fund	Unlikely[59]	Unlikely[60]

[45] Some investment in sustainability "opportunities" but no mention of exclusions/filters in fixed income: https://www.gic.com.sg/wp-content/uploads/2023/07/GIC_AR_2022-23_PRINT.pdf (pg. 40).

[46] See link in previous footnote, pg. 43, for a brief mention of sustainability-related proxy voting without reference to voting against directors.

[47] https://www.frtib.gov/pdf/reading-room/FinStmts/TSP-FS-Dec2023.pdf (pg. 10 – low-cost index funds only).

[48] See, e.g., pg. 3-4 showing that voting is conducted according to the managers' own guidelines, not FRTIB's: https://www.frtib.gov/meeting_minutes/2024/2024Jan.pdf.

[49] The proceeds of the Fund's own green bond issuances cannot go towards fossil fuel expansion (see https://www.pif.gov.sa/en/our-financials/green-finance-framework/), but aside from this they do not appear to apply exclusions or tilts to the bond portfolio: https://www.pif.gov.sa/en/our-financials/annual-reports/. The Fund holds fossil fuel assets worth approximately $367 billion: https://investinginclimatechaos.org/reports.

[50] The Fund's annual report notes that it engaged with 30+ companies in 2023 (https://www.pif.gov.sa/en/our-financials/annual-reports/, pg. 96), but there is otherwise no detail on its stewardship activities.

[51] The Fund's environmental and social exclusions apply "across all of the relevant asset classes" (https://assetmanagement.apg.nl/media/fmfb4rbf/apg-am-summary-of-exclusion-approach-corporate-and-sovereign-december-2022.pdf, pg. 3) and their Board Chair has confirmed the sale of fossil fuel bonds (https://www.europeanpensions.net/ep/The-Netherlands-largest-pension-fund-sells-all-its-liquid-fossil-fuel-investments.php).

[52] APG (https://apg.nl/media/yx4m5nyh/stewardship-overview-2023.pdf, pg. 46) and ABP (https://www.abp.nl/content/dam/abp/documenten/beleggen/abp-votingpolicy.pdf, pg. 4) both specify that they vote against directors on environmental and social grounds.

[53] The Fund's tobacco, firearms, and coal exclusions apply to debt holdings (https://www.calpers.ca.gov/docs/board-agendas/202103/invest/item09a-01_a.pdf, pg. 3).

[54] See "Board Diversity" and "Climate Risk Oversight" sections, including specific reference to running "Vote No" campaigns: https://www.calpers.ca.gov/page/investments/corporate-governance/corporate-engagement.

[55] In 2020 QIA announced that it would no longer make new investments in hydrocarbons (https://www.qia.qa/en/About/Pages/Climate.aspx), and it is unclear whether this applies to all asset classes.

[56] QIA's website contains no information, but elsewhere notes that QIA "engages with its portfolio companies on their financial and ESG performance by communicating expectations and monitoring their performance" (https://ifswf.org/assessment/qia-2022, Principle 21); this is unlikely to entail voting against directors.

[57] CPP favours engagement over exclusion (https://www.cppinvestments.com/wp-content/uploads/2024/02/CPP-Investments-Policy-on-Sustainable-Investing-February-2024-FINAL-ENGLISH.pdf, pg. 4), and does not have screens other than for controversial weapons that violate Canadian law (https://www.cppinvestments.com/wp-content/uploads/2023/12/SI-Report-2023-EN.pdf, pg. 14); it is unclear whether these apply to bonds, but they do not apply to index holdings. In PRI reporting (https://ctp.unpri.org/dataportalv2/transparency), OO 13, the Fund says it does not incorporate ESG into fixed income manager selection, in OO 17 FI the Fund does not select any fixed income screening-related options, and in PGS 37 CPP does not select "Not Investing" or "Divesting" for fixed income escalations. CPP has come under fire on fossil fuels: https://www.corporateknights.com/category-finance/canadas-biggest-pension-plan-fuelling-worst-rainy-day-future-ever/.

[58] Policy is to "[v]ote against the re-election of a director who underperforms or contributes to a material environmental, social or governance failure" (https://www.cppinvestments.com/wp-content/uploads/2024/02/PVPGs-2024-Feb-2024-FINAL-ENGLISH.pdf, pg. 19), confirmed in its PRI reporting (https://ctp.unpri.org/dataportalv2/transparency), section PGS 36.

[59] There is no mention of exclusions in the Fund's annual report (https://www.cpf.gov.sg/content/dam/web/member/infohub/documents/CPF_AnnualReport2023_Part1.pdf), nor any other documents on their website containing such information.

[60] There is no mention in its annual report (see previous footnote) of the Fund's own voting practices in this regard and the Singapore Stewardship Principles do not refer to director votes (https://stewardshipasia.com.sg/docs/saclibraries/default-document-library/ssp_for-20responsible-20investor-202-0-1-.pdf?sfvrsn=82133969_3).

National Social Security Fund (China)	Unlikely[61]	Unlikely[62]
Temasek Holdings	Unlikely[63]	Unclear[64]
CDPQ	Yes[65]	Yes[66]
California State Teachers Retirement System	Yes[67]	Yes[68]
Mubadala Investment Company	Unlikely[69]	No[70]
PGGM	Yes[71]	Yes[72]
New York State Common	Yes[73]	Yes[74]

[61] The Fund has not publicly released an annual report since 2018 and its materials are not translated into English, so it is unclear, but the overview of its responsibilities and investment philosophy makes no mention of social or environmental issues: https://www.ssf.gov.cn/portal/yw/webinfo/2021/09/1632812253754637.htm.
[62] See previous footnote.
[63] The Fund claims to apply an ESG framework in its investment processes (https://www.temasekreview.com.sg/downloads/Temasek-Review-2024-full-version.pdf, pg. 32) and the framework notes that greenhouse gas emissions budgets apply to all investment teams (https://www.temasek.com.sg/en/sustainability/sustainability-in-our-investments/embedding-esg-as-part-of-our-investment-process%23portfolio-monitoring), although its emissions reporting does not include credit holdings (https://www.temasek.com.sg/en/sustainability/managing-sustainability-and-climate-risk-and-performance/portfolio-metrics-and-targets#portfolio-ghg-emissions-performance). The Temasek Head of ESG says the Fund is avoiding fossil fuel exclusions “as we don’t want it to be black and white” (https://www.eco-business.com/news/temasek-sees-its-first-reduction-in-portfolio-emissions-against-targets-set-in-2020/).
[64] The Fund notes that it holds boards accountable (https://www.temasek.com.sg/en/about-us/corporate-governance#exco) and has engaged with 19 companies on climate-related issues in the past year (https://www.temasek.com.sg/en/sustainability/sustainability-in-our-investments/engaging-our-portfolio-companies#dedicated-platforms-with-programmatic-engagements), but it is unclear whether this translates into votes against directors on environmental or social grounds.
[65] Fixed income is included in CDPQ’s emissions calculator and climate strategy (https://www.cdpq.com/sites/default/files/medias/pdf/en/2023_cdpq_sustainable_investing_report.pdf, Appendix 2 & 4). Its tobacco exclusion covers “any” such investments (https://www.cdpq.com/en/tobacco-free-portfolios).
[66] Voting policy provides for voting against directors on environmental and social grounds (https://www.cdpq.com/sites/default/files/medias/pdf/en/policy_exercise_voting_rights.pdf, pg. 5 and pg. 13).
[67] Exclusions of tobacco, firearms, and thermal coal apply to debt holdings (https://www.calstrs.com/files/964073329/CalSTRSInvestmentReports2023.pdf, pg. D-1).
[68] Corporate Governance Principles include voting against directors on diversity grounds (https://www.calstrs.com/files/adf7cba85/CorporateGovernancePrinciples01-2024.pdf, pg. 7) and the Fund has increasingly voted against directors on climate grounds (https://www.calstrs.com/calstrs-stresses-climate-disclosure-with-2024-proxy-season-votes).
[69] The Fund imposes restrictions on its own green bond issuances, including fossil fuel restrictions among others (https://www.mubadala.com/en/-/media/project/mubadala/reports/en/2022/mdgh-green-finance-framework.pdf, pg. 10), but there is no evidence that the portfolio’s screening covers fixed income: https://cdn-mubadala.azureedge.net/-/media/project/mubadala/mubadala-2023/pdf/mubadala-annual-report-2023-english-language.pdf, https://www.mubadala.com/en/-/media/143CC37ABC164772B2CB4AD85B243318.ashx, https://www.mubadala.com/en/responsible-investing.
[70] The Fund’s annual report states that its stewardship activities are primarily carried out through their memberships in industry organisations: https://cdn-mubadala.azureedge.net/-/media/project/mubadala/mubadala-2023/pdf/mubadala-annual-report-2023-english-language.pdf, pg. 70. These organisations include the World Economic Forum and sovereign wealth fund fora that do not advocate for voting against directors on environmental or social grounds.
[71] Exclusions related to controversial weapons, tobacco, and fossil fuels apply to all asset classes, including credit (https://www.pggm.nl/media/d30fierj/202210-pggm_esg_guideline_ic_credit_03mvd2.pdf, pg. 4).
[72] Voting guidelines provide for voting against directors on social and environmental grounds (https://www.pggm.nl/media/5xxhbgnv/pggm-global-voting-guidelines-2024.pdf, pg. 13).
[73] The Fund appears to have few exclusions or restrictions, but recent restrictions apply to corporate bonds and equity holdings (https://www.osc.ny.gov/press/releases/2024/02/ny-common-retirement-fund-announces-new-measures-protect-state-pension-fund-climate-risk-and-invest) and portfolio climate-related assessments include bonds (https://www.osc.ny.gov/files/reports/special-topics/pdf/progress-report-climate-action-plan-2022.pdf).
[74] Voting guidelines allow voting against directors on climate grounds (https://www.osc.ny.gov/files/common-retirement-fund/corporate-governance/pdf/2024-stewardhip-priorities-and-proxy-voting-guideline-updates.pdf,

Investment Corporation of Dubai	No[75]	No[76]
New York City Retirement	Yes[77]	Yes[78]
Employees Provident Fund (Malaysia)	Unclear[79]	Yes[80]

pg. 2) and related to material ESG risks (https://www.osc.ny.gov/files/common-retirement-fund/corporate-governance/pdf/proxy-voting-guidelines-2024.pdf#page=33, pg. 13).

[75] The Fund does not ascribe to a "rules-based approach" regarding ESG (https://icd.gov.ae/investment-strategy/) and does not appear to have any exclusions.

[76] The Fund "believe[s] in engaging constructively with management teams to promote positive change" (https://icd.gov.ae/investment-strategy/), which may preclude the use of an antagonistic tool such as director votes, and there are no voting guidelines to suggest that they vote against directors.

[77] Fossil fuel exclusions apply to fixed income holdings for NYCERS (https://comptroller.nyc.gov/wp-content/uploads/2024/01/NYCERS-Net-Zero-Implementation-Plan-2023.pdf, pg. 35), BERS (https://comptroller.nyc.gov/services/for-the-public/confronting-the-climate-crisis/climate-transition/bers-net-zero-implementation-plan/), and TRS (https://comptroller.nyc.gov/wp-content/uploads/2023/07/TRS-Net-Zero-Implementation-Plan_FINAL.pdf, pg. 12), and in PRI reporting (https://ctp.unpri.org/dataportalv2/transparency), sections OO 13 and PGS 37, both NYCERS and the Teachers' Retirement System of the City of New York say that they incorporate ESG into fixed income manager selection and have used "Not Investing" and "Divesting" as escalation measures in the past three years. All five NYC pension funds have divested from private prison companies' stocks and bonds (https://comptroller.nyc.gov/newsroom/comptroller-stringer-and-trustees-new-york-city-pension-funds-complete-first-in-the-nation-divestment-from-private-prison-companies/).

[78] NYCERS's Net Zero Implementation Plan says it will review its managers' climate-related proxy voting records, including regarding director elections (https://comptroller.nyc.gov/wp-content/uploads/2024/01/NYCERS-Net-Zero-Implementation-Plan-2023.pdf, pg. 29), as does that of TRS (https://comptroller.nyc.gov/wp-content/uploads/2023/07/TRS-Net-Zero-Implementation-Plan_FINAL.pdf, pg. 29) and BERS (https://comptroller.nyc.gov/services/for-the-public/confronting-the-climate-crisis/climate-transition/bers-net-zero-implementation-plan/). PRI reporting from both NYCERS and TRS (https://ctp.unpri.org/dataportalv2/transparency), section PGS 36, says they and/or their managers have voted against directors, including board chairs, as escalation measures. All five of the NYC pension funds have advocated for voting against directors on environmental and/or social issues, including a Vote No campaign against Amazon directors on workers' rights (https://comptroller.nyc.gov/newsroom/new-york-city-and-state-pension-funds-launch-vote-no-campaign-against-against-the-re-election-of-two-amazon-board-directors-responsible-for-oversight-of-human-capital-management/).

[79] The Fund already has exclusions relating to weapons, tobacco, alcohol, adult entertainment, and gambling, and its Sustainable Investment Policy says that "EPF will be enhancing our list of exclusions by accounting for ESG considerations across all asset classes" (https://www.kwsp.gov.my/documents/d/guest/epf-sustainable-investment-policy, pg. 5), suggesting that they do not apply to all asset classes currently. The Fund's Sustainable Investment Priority Sector Policies document lists as the final step of stewardship escalation "Full divestiture of our equity ownership from the company" (https://www.kwsp.gov.my/documents/d/guest/epf-sustainable-investment-priority-sector-policies, pg. 13), suggesting that exclusions apply to the equity portfolio only. However, in its PRI reporting (https://ctp.unpri.org/dataportalv2/transparency), section PGS 37, the Fund says it and/or its managers have used "Not Investing" and "Divesting" as an escalation measure in the past three years.

[80] Voting guidelines provide for voting against directors "involved in company decisions that led to any undesirable and severe environmental or social outcomes" (https://www.kwsp.gov.my/documents/d/guest/epf-corporate-governance-principles-and-voting-guidelines_2023, pg. 12), and the Fund voted against at least some directors due to insufficient board gender diversity (https://www.asianinvestor.net/article/asset-owners-aim-to-change-company-behaviour-through-proxy-voting/481136). In its PRI reporting (https://ctp.unpri.org/dataportalv2/transparency), section PGS 36, the Fund said it and/or its managers have deployed votes against directors, including board chairs and equivalent.