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Universal Ownership: A Call for Practical Implementation

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Key Findings

Self-inflicted destruction of wealth such as that experienced by Norway's Government Pension Fund Global strongly brings the case for universal owners to adopt policies that explicitly protect wider market returns as part of fiduciary duty.

Despite universal ownership theory being well acknowledged, owners tend only to adopt principles-based stewardship efforts or join collaborative engagement initiatives while failing to effectively integrate theory into asset-level decision-making.

IEEFA proposes that universal owners adopt 'systemically adjusted' investment models to empirically value assets in the context of wider portfolio impact. Such analysis can inform stewardship, improve outcomes for the universal owner and benefit the economy at large.

Although it remains a challenge to accurately price carbon, this uncertainty should not delay the necessary evolution of investment processes.

Executive Summary

Universal ownership is a concept that refers to asset owners with such broad economic exposures and long-term investment horizons that they effectively own a slice of the global economy. It follows that they will have an interest in the long-term health of capital markets as a whole because their own returns are largely tied to overall market movements. Unable to allocate away from systemic risks such as climate change means that for the universal owner, beta (market) returns must be protected, often through addressing the externalities caused by entities held within its own portfolio.

Using Norway's sovereign wealth fund as a case study in universal ownership, IEEFA lays bare the scale of the problem faced by universal owners through introductory analysis that demonstrates how the externalities of just five portfolio constituents contribute to an implied portfolio performance drag of around -0.36%, assuming an externality cost that falls in the middle of recent academic discourse. This analysis should be treated as a proof of concept, but such self-inflicted destruction of shareholder wealth strongly brings the case for universal owners to immediately implement more explicit beta-protectionist policies as part of fiduciary duty.

Despite universal ownership theory being well acknowledged, universal owners tend only to adopt principles-based stewardship efforts or join collaborative engagement initiatives while failing to also effectively integrate theory into asset-level decision-making processes. IEEFA proposes that universal owners should urgently adopt 'systemically adjusted' models to better value assets holistically, i.e. in the context of their impact on the wider portfolio. We outline one example of how systemically adjusted analysis could be applied to improve discounted cash flow modelling, which in turn can inform company stewardship processes. Such integration of universal ownership theory would allow for better prioritisation of resources, correct for misalignment between the goals of investment teams and those of the universal owner as a whole, and help frame climate-based stewardship in quantitative, fiduciary terms—reducing reliance on more ambiguous guiding principles.

Although accurately pricing carbon-based externalities as part of this process remains a challenge, such uncertainties do not detract from the theory and should not be used to delay the evolution of investment processes.

IEEFA believes that the case for universal ownership remains firmly intact but must evolve in the face of new challenges. Particularly in secondary markets such as public equities, direct investee company engagement has traditionally been favoured, but the hitherto ineffectiveness of this approach in meaningfully altering market behaviour has to be considered. This is brought more sharply into focus by growing anti-trust concerns and aggressive litigation that is reshaping the relationship between asset owner and asset. Universal ownership within this budding new paradigm is a topic which IEEFA will explore in future work, as part of a short series of research-based thought pieces in this area.

The Universal Owner Problem

The cost of environmental degradation on economic performance is increasingly obvious, with implications already manifest through event-driven and chronic physical risks to companies, both direct and indirect. Countless examples of acute infrastructure damage, supply chain disruption and power outages can, for example, be paired with trends of increased resource costs and rising insurance premiums. In response to climate change, shifts in policies and regulations, and changes in consumer behaviour are expected, posing increased transitional risks to companies that are unprepared or unable to align with decarbonisation goals. Liability risk also rises as future generations look to distribute costs more justly on those actors at fault for climate change.

Against this backdrop, even through the lens of single materiality,[1] it is typically the fiduciary duty of asset managers and owners to recognise and avoid such risks, to protect their portfolios from the worst effects of climate change. This presents a significant problem for the universal owner, a concept popularised by Hawley and Williams.[2] According to Quigley,[3] universal owners can be considered:

> *"…diversified asset owners such as pension funds, university endowments, and sovereign wealth funds that have an interest in the long-term health of the financial system as a whole because their own returns and duties are largely tied to overall market movements."*

In line with assertions made by Danu Insight[4] (formerly the Universal Owner Initiative) and much academic literature, IEEFA considers that the majority of asset managers also fall under this category even if their clients (who are the ultimate asset owners) do not. There is little question that our case study, the Government Pension Fund Global of Norway (GPFG) typifies the universal owner, given its portfolio of over 9,000 names that is broadly representative of global capital markets and an investment objective that prioritises the long-term intergenerational prosperity of Norwegian citizens.

In short, the problem faced by the universal owner is that with such broad economic exposures and long-term investment horizons, they are unable to diversify away from growing environmental risks. Norges Bank Investment Management (NBIM), responsible for the operation of the GPFG, specifically drew attention to this issue in its 2025 Climate Action Plan,[5] confirming its role as universal owner:

[1] Single materiality relates to how environmental and social factors can affect the operations and consequently value of a company. This is often referred to as the 'outside-in' effect. Single materiality is not concerned with the impact that the same company may have on the environment and society (the 'inside-out' effect). To consider both is referred to as double materiality.
[2] Taylor & Francis. The Emergence of Universal Owners. Challenge. Volume 43:4, pages 43-61. 2000.
[3] The Centre for the Study of Existential Risk. Universal Ownership in Practice: A Practical Positive Investment Framework for Asset Owners. 22 July 2020.
[4] Danu Insight. What is Universal Ownership Theory?
[5] Norges Bank Investment Management. 2025 Climate action plan. September 2022

> *"The fund seeks to manage risks and capture investment opportunities by being **broadly invested**. The greenhouse gas emissions associated with portfolio companies give rise to transition risk [… and] **may also adversely affect other companies in the fund's portfolio**, and the economy at large…*
>
> *We therefore stand to benefit from an orderly transition that allows for the investment and technological advances needed for a sustainable economy, the redeployment of financial and human capital over time, and the **phasing out of carbon-intensive energy provision and activities**."*

It is questionable as to whether *any* portfolio or strategy (universal or otherwise) can plan to avoid the worst of long-term climate-related externalities, even by defensively positioning away from high-risk sectors and assets. However, such concerns are particularly acute for universal owners given the unavoidable exposure to near-term risk that already affects the operations of investee companies. Unable to selectively allocate their way out of trouble ultimately means that beta (market) returns *must* be protected, with the only means of hedging against systemic risk being to encourage change within the economy at large. Often this will mean addressing the externalities caused by entities held within the portfolio itself.

Pricing Externalities Remains a Challenge

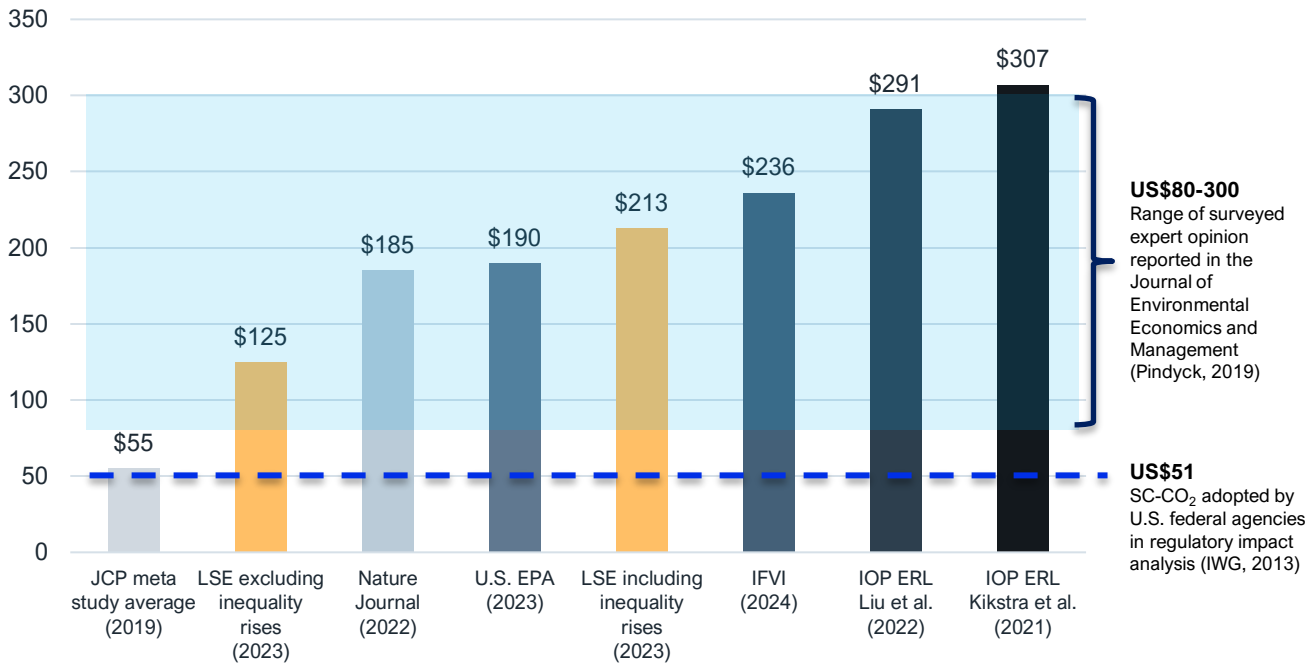
To address climate change as a source of systemic risk, it would help to understand how big the associated externalities are. Calculating the size of externalities remains a significant challenge for academics and industry alike, with study in the area often caveated by broad confidence intervals. That said, as our collective understanding of the projected impacts of climate change improves, so too do estimates of the associated economic costs. In the first instance, we look to highlight the scale of the universal owner problem by leaning on the social cost of carbon (SC-CO_2), a metric recognised by national and international bodies that has increasingly come to underpin much environmental cost-benefit analysis. SC-CO_2 attempts to quantify the value of economic damage caused by adding one incremental metric tonne of carbon dioxide emissions into the atmosphere.

SC-CO_2 is no exception to uncertainty, and broad estimate ranges for the metric exist. Characterising this, a meta-study from 2019[6] found the average SC-CO_2 of 58 sub-studies was just US$55 per tonne (/t) but with estimates ranging from -US$13 to US$2,386/t, owing in part to varying discount rate assumptions. The same study also noted a correlation between higher estimates of SC-CO_2 and more recent publication dates as well as potentially the quality of the sub-study, i.e. whether it had undergone peer review. Indeed, research from the same year[7] based on a survey of economists and nature scientists' latest predictions further narrowed down the range of likely SC-

[6] ScienceDirect. Estimates of the social cost of carbon: A review based on meta-analysis. Journal of Cleaner Production. Volume 209, pages 1,494-1,507. 1 February 2019.
[7] ScienceDirect. The social cost of carbon revisited. Journal of Environmental Economics and Management. Volume 94, pages 140-160. March 2019.

CO_2, suggesting a higher US$80-300/t band, as shown in the blue shaded area in Figure 1. Given ongoing improvements in climate modelling, focus should be on more recent, peer-reviewed estimates when incorporating SC-CO_2 estimates into any analysis.

Figure 1: Baseline SC-CO_2 Estimates (US$/t) From Recent Peer-Reviewed Studies



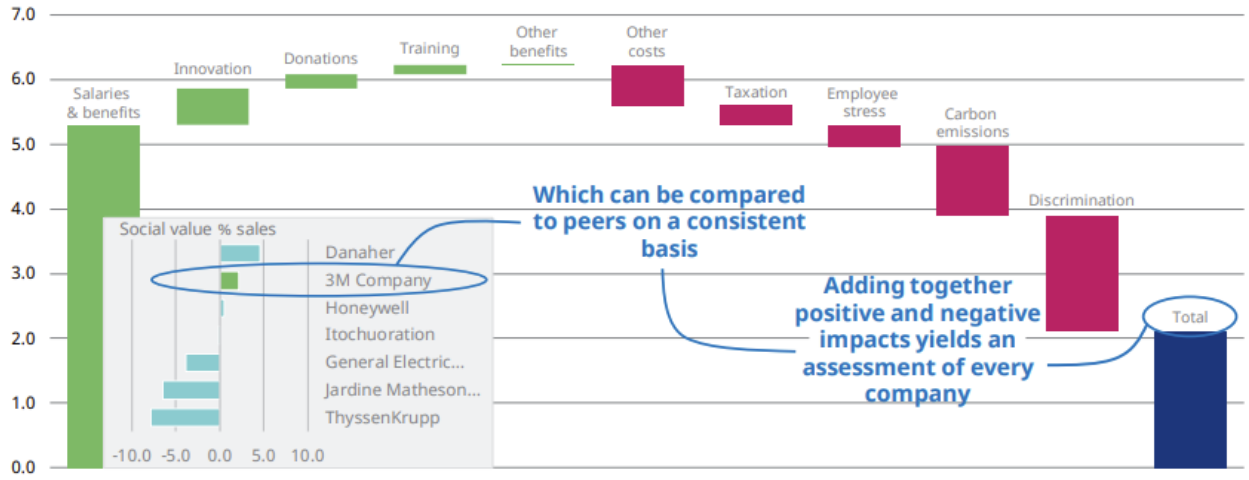
Source: IEEFA, Journal of Environmental Economics and Management, Journal of Cleaner Production, London School of Economics, Nature Journal, U.S. Environmental Protection Agency, Institute of Physics Environmental Research Letters, International Foundation For Valuing Impacts.

For our purposes, we borrow from the comprehensive, multi-year study published in Nature Journal (2022), which implies a central predicted SC-CO_2 of US$185[8] and sits roughly in the middle of recent estimates as depicted in Figure 1. Debate as to the correct level, or indeed how to incorporate non-climate change-related externalities (which may be driven by carbon emissions), is beyond the scope of this report. Uncertainty in this regard does not change recommendations, and IEEFA would suggest that universal owners develop proprietary assessments for their own, more comprehensive models.

Indeed, it is worth noting that industry participants are already attempting to better quantify externalities. Below is an example of externality disaggregation carried out by Schroders, one of the UK's largest asset managers, as part of its SustainEx[9] framework.

[8] Nature. Comprehensive evidence implies a higher social cost of CO_2. Volume 610, pages 687–692. 2022.
[9] Schroders. SustainEx. April 2019.

Figure 2: Schroders' SustainEx—Externality by Source (as % of Total Company Sales)



Source: Schroders.

SustainEx is designed to quantify the social and environmental costs that companies impose (or benefits they provide), which are not currently realised through their own financial positions. However, as the manager notes,[10] output is primarily used to aid investment team understanding and avoidance of single materiality transition risk—performing a functionally similar role to the decomposition of climate-transition value at risk (VaR). By focusing primarily on damage limitation and not linking the externalities directly to costs incurred by their wider portfolio, a significant amount of actionable information is lost. This final step would result in better understanding of the value proposition of an asset, when its impact on the wider portfolio is considered. A more holistic approach would provide a manager with the information required to make allocation and stewardship decisions that benefit their aggregate position, rather than benefit any one investment. For want of a better term, using quantitative methods to determine value in the context of wider portfolio impacts will be shorthanded from here on as applying a 'systemically adjusted' approach.

[10] Ibid.

Systemically Adjusted Analysis Exposes the Extent of Self-Sabotage

IEEFA proposes a systemically adjusted method that reveals the extent to which emissions generated by a universal portfolio's own holdings contribute to the destruction of shareholder wealth. Analysis in this section is intended as an illustration given that certain simplifying assumptions have been made (as will be detailed below). Nevertheless, estimates serve to highlight the significant impact of carbon externalities on universal owner wealth. Further discussion of potentially expanded analysis can be found in Appendix B.

To illustrate the impact of carbon externalities, we focus on a small group of the highest CO_2-emitting companies currently held by the GPFG as a case study. These five companies may have provided pyrrhic capital appreciation for their owners, while also generating a bill which is paid by the rest of the global economy. On the basis that the portfolio is broadly representative of wider economic conditions in terms of its sensitivity to externalities—i.e. assuming universal ownership status—we can assume that these externalities will ultimately be re-absorbed, at least in part, by the GPFG itself.

Firstly, taking the five largest developed market polluters (identified by MSCI in its July 2023 Net Zero Tracker)[11] held by the GPFG, then combining the scope 1+2+3 emissions information[12] with holdings and ownership-level data collected from NBIM, we can calculate the externalised cost of owned emissions in dollar terms (assuming a SC-CO_2 of US$185). Total damages of US$13.7 billion are attributable to the portions of the five investee companies owned by the GPFG. This figure amounts to 0.9% of the total assets under management (AUM) and is the annual amount that it would cost these five companies to make full reparations for the damage they will cause, based on their emissions over the past year (and scaled down based on the size of the GPFG's ownership stake).

These social and economic damages will of course impact the financial positions of economic participants, ultimately manifesting as lower earnings across markets. If we assume that the damages calculated are indeed fully captured by markets, we can conservatively posit that these lost earnings would have been paid out to shareholders (through dividends and other distributions) at typical payout ratios, were companies not footing the bill for carbon-based externalities. By applying the 12-month trailing payout ratio of the MSCI All Country World Index (40.5%), we can translate damages into lost shareholder income. In this way, our calculations are converted into an estimation of the amount of wealth destruction generated by the GPFG's stake in these companies—this equates to approximately US$5.6 billion based on 2023 emissions. We can rebase this damage using current total AUM of the portfolio to arrive at an implied lost shareholder income ratio of -0.36%. This can be interpreted as an implied portfolio carbon-based performance drag, as it might apply to a typical

[11] MSCI. The MSCI Net-Zero Tracker. July 2023

[12] IEEFA assumes that emissions which are indirect and facilitated or enabled by an investee company (i.e. scope 2 and 3 emissions) are indeed a result of the company's operations and therefore within the scope of its pollution footprint. This is in line with disclosure regulations such as the Corporate Sustainability Reporting Directive in the European Union, which mandates reporting of greenhouse gas emissions across a company's value chain.

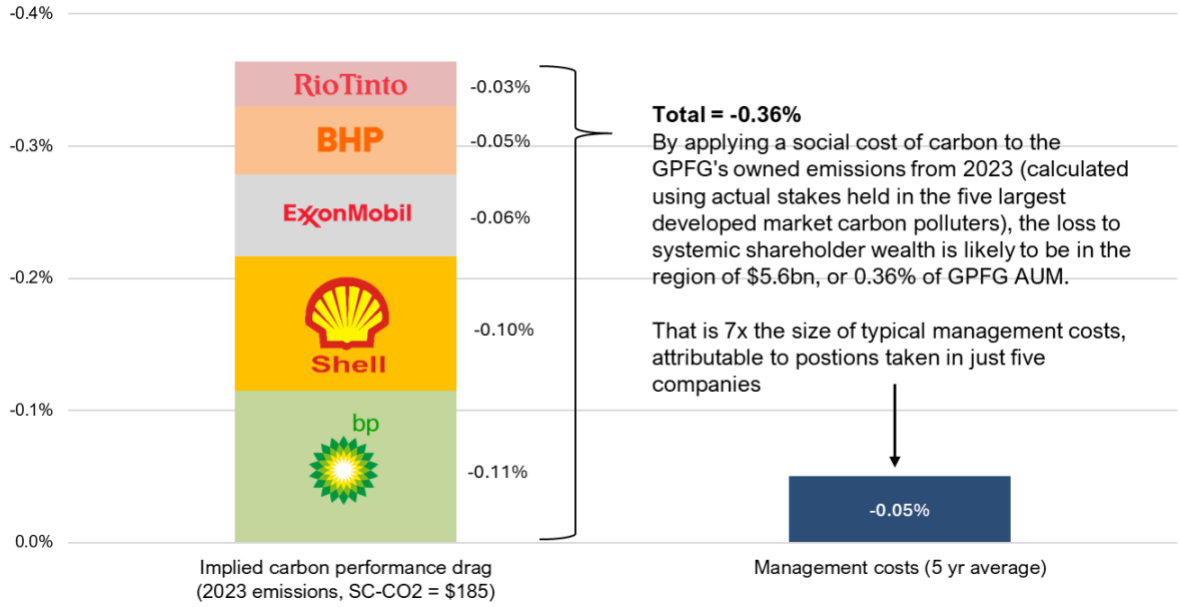
accumulation fund. Carbon emissions are highly concentrated,[13] yet this figure is over seven times the annual management cost incurred by the portfolio (0.05%)[14] through the activities of just five companies, in a portfolio holding over 9,000 securities.

Table 1: GPFG-Owned Systemic Economic Damage and Contribution to Shareholder Wealth Destruction (Based on 2023 Emissions and Holdings Data, Assuming SC-CO_2 is US$185)

	Total scope 1+2+3 CO_2 equivalent (tonnes, millions)	GPFG portfolio market value (US$, m)	Company ownership (%)	Fund-owned emissions (tonnes, m)	Social cost of owned emissions (US$, m)	Payout ratio* (%)	Implied lost shareholder income (US$, m)
ExxonMobil	938.0	5,618	1.4%	12.7	-2,343	40.5%	-949
Shell	719.5	6,173	2.9%	20.7	-3,834	40.5%	-1,553
BP	687.3	3,935	3.4%	23.4	-4,336	40.5%	-1,756
Rio Tinto	673.7	2,786	1.0%	6.8	-1,264	40.5%	-512
BHP Group	661.8	2,859	1.6%	10.6	-1,959	40.5%	-794
Total (US$ m)		21,370			-13,735		-5,562
Total (as % AUM)		**1.40%**			**-0.90%**		**-0.36%**

Source: IEEFA, MSCI, NBIM (GPFG holdings taken from reporting as at 31 December 2023).
** Payout ratio is proxied as that of the MSCI AC World Index and calculated as one-year trailing dividend yield/earnings yield, taken from MSCI as at March 2024.*

The GPFG's Implied Carbon-Based Performance Drag Contributions (%, Based on 2023 Emissions and AUM)



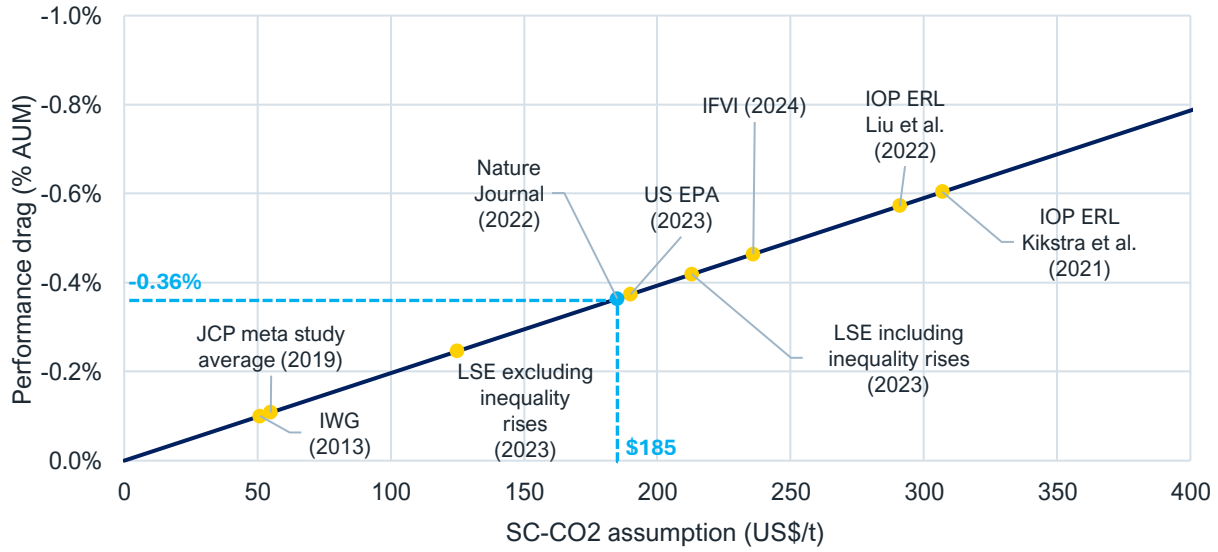
Source: IEEFA, MSCI, NBIM (GPFG holdings taken from reporting as at 31 December 2023).

[13] CPD. New report shows just 100 companies are source of over 70% of emissions. 10 July 2017.
[14] Norges Bank Investment Management. Fund returns. 27 February 2024.

It is worth observing that this implied carbon-based portfolio performance drag rebases owned damages by total portfolio AUM and is therefore indicative of how much the portfolio contributes to wealth erosion, based on its own allocations. Similar to MSCI's "Implied Temperature Rise" metric[15], it looks at the portfolio in a vacuum and asks what the performance drag would be if hypothetically the portfolio was 100% representative of wider markets. As such, this is not necessarily representative of the actual performance drag experienced. For example, if the GPFG owned none of these companies, destruction of wealth would still exist, but the portfolio's contribution would be zero. Appendix A details how the actual carbon-based performance drag suffered by the GPFG as a result of the activities of these five companies is likely closer to -0.27%. Both metrics have their uses, but the former speaks more to the decision-making and actions of the GPFG.

Given the previously discussed broad confidence intervals when predicting SC-CO_2, it is worth plotting the simple linear relationship between differing SC-CO_2 assumptions and the implied carbon-based performance drag that is attributable to holdings in the five largest developed market polluters: ExxonMobil, Shell, BP, Rio Tinto and BHP Group. Our reference study, suggesting a SC-CO_2 of US$185, is highlighted in Figure 4 below. This shows the -0.36% drag that can be traced back to holdings in these five mega-polluters, but this figure could also be calculated as ranging somewhere between -0.10% and -0.60% if different studies are used. Importantly, regardless of the assumption made on the exact cost, we observe material wealth destruction, unless the carbon externality is assumed to not exist. Again, IEEFA would suggest that asset managers produce their own pricing models when integrating systemic costs into investment processes and decision-making.

Figure 4: The GPFG's Implied Carbon-Based Performance Drag at Varying SC-CO2 Levels (%, Based on 2023 Emissions and AUM)



Source: IEEFA, Journal of Cleaner Production, London School of Economics, Nature Journal, U.S. Environmental Protection Agency, Institute of Physics Environmental Research Letters, International Foundation For Valuing Impacts.

[15] MSCI. Implied Temperature Rise. May 2024

Although this assessment is made gross of any idiosyncratic upside to the universal owner, i.e. income generated by these companies when producing externalities, such self-inflicted destruction of shareholder wealth strongly brings the case for universal owners to urgently adopt more explicit beta-protectionist policies as part of fiduciary duty. Such policy may be seen as radical or at the very least as a break from traditional fundamental investment approaches (certainly in the case of active managers). This means that effecting change in the market as a top priority, as opposed to maximising relative returns or minimising tracking error, will clearly require buy-in from stakeholders. For our case study (the GPFG), the stakeholder base is extensive and includes Norway's Ministry of Finance, parliament and public at large. To your average asset manager, convincing fund participants will be paramount, particularly in the U.S., where anti-trust complaints already dissuade managers from taking more forceful universal ownership approaches. A systemically adjusted implied performance drag as we have demonstrated underlines the importance for universal owners to indeed act like universal owners. As will be discussed in forthcoming research, such a tool can act as an important educative aid for managers to use with participants.

Such self-inflicted destruction of shareholder wealth strongly brings the case for universal owners to urgently adopt more explicit beta-protectionist policies as part of fiduciary duty.

Integrating Universal Ownership Into Investment Processes

Despite being well acknowledged by influential asset owners like NBIM and broader industry initiatives such as the United Nations Principles for Responsible Investment (PRI),[16] universal ownership is rarely adopted as part of empirical modelling, applied in the course of normal investment processes. The PRI reports that only a minority of its signatories have developed metrics for climate impact or set targets to guide a climate-related business transition,[17] despite a majority assessing their exposures to climate risk through measures such as climate VaR scenario analysis. Put simply, climate risk metrics have "yet to be fully incorporated into investment decision-making".[18] Even Schroders, leading the pack in identifying the source of externalities, uses its SustainEx framework predominantly as a tool to assess transition risks and opportunities at the asset level.

Universal owners will typically follow principles-based recommendations from initiatives such as the PRI or join collaborative efforts such as Climate Action 100+[19] but then fail to effectively bake similar approaches into their own asset-level decision-making. IEEFA does not wish to detract from the case

[16] The Principles for Responsible Investment. Active Ownership 2.0: The Evolution Stewardship Urgently Needs.
[17] The Principles for Responsible Investment. Climate risk: An investor resource guide
[18] Responsible Investor. Deep Dive: How are investors using climate value-at-risk? 3 April 2024.
[19] Climate Action 100+. The three goals.

for overarching guidance, which remains important, but would argue that robust, systemically adjusted modelling should be better integrated into investment processes to improve outcomes for the universal owner. By complementing recommendations such as those elicited by Quigley,[20] systemically adjusted modelling can contribute to a more complete universal ownership approach.

We have applied a form of basic systemically adjusted analysis to the holdings of the GPFG to illustrate the size of a self-inflicted performance drag contribution and consequently the need for universal owners to address carbon-based externalities. This is a useful exercise to understand the scale of the problem but does not demonstrate how the universal owner could apply this theory in routine decision-making. Below, we put forward an example of how such methods might be applied and illustrate how analysis could subsequently direct stewardship efforts. There are many potential applications across asset classes and investment approaches, but we focus here on perhaps the most fundamental pillar of active investing, namely assessing the fair value of potential investments.

Systemically Adjusted Valuation Techniques

Although analysts and managers are free to use a range of qualitative and quantitative techniques to arrive at investment recommendations, the process is typically built upon discounted cash flow (DCF) analysis. It is common for analysts to factor in some form of environmental, social and governance (ESG) consideration as part of stock recommendations, but quantification is often applied outside of traditional DCF modelling or on a single materiality basis only. For example, should a company compare unfavourably in ESG terms to industry peers, it may receive a set discount to the fair value (e.g. 5%). To the fundamental analyst covering a specific industry or sector, this is an entirely fair approach. The potential damage caused by externalities is not borne by the company itself and is therefore not material to cashflows. Somewhat reductively, to that analyst, their success is measured simply in whether they have correctly predicted a stock price to go up or down. However, to the universal owner, that externality is *entirely* material because it is distributed to the remainder of its portfolio. This means that the goals of the analyst when making recommendations do not align with those of the universal owner as a whole. This misalignment is mirrored in research that finds investment professionals tend to hold a negative view of ESG integration, despite firm and industry-wide efforts to promote it. Some studies[21] posit that unlocking the positive externalities from sustainably led investing may require fund managers to explicitly incorporate more non-financial criteria directly into their investment models, a notion that IEEFA would agree with.

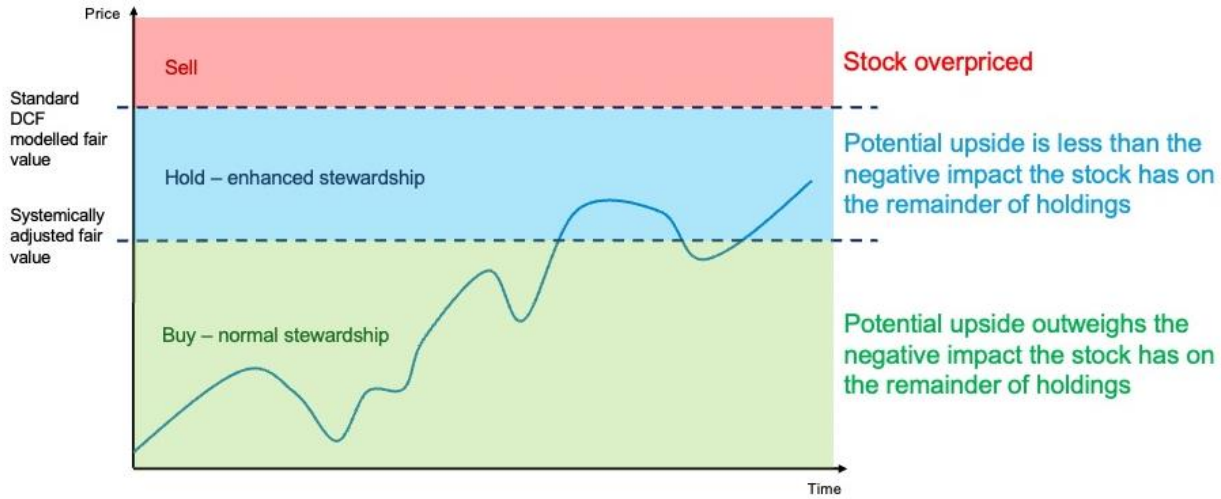
The goals of the analyst when making recommendations do not align with those of the universal owner as a whole.

[20] The Centre for the Study of Existential Risk. Universal Ownership in Practice: A Practical Positive Investment Framework for Asset Owners. 22 July 2020.
[21] Zeidan. Why don't asset managers accelerate ESG investing? A sentiment analysis based on 13,000 messages from finance professionals. Business Strategy and the Environment. 30 March 2022

To fully appreciate the value of a company in the context of its impact on the wider portfolio, IEEFA would propose a two-tier system which includes both a standard DCF model and one that fully deducts the systemic carbon externality from free cash flows. This should be calculated in dollar terms as the total cost to the wider portfolio, in the same vein as the SC-CO_2 performance drag analysis demonstrated previously as proof of concept. Two separate DCF models would of course result in two price targets for the company. One immediate benefit of this approach is that the analyst can point to their standard DCF-modelled price estimates as a measure of their skill, but the universal owner can incorporate the fair value-adjusted price into decision-making processes.

Typically, when fair value is reached, it is a signal for the fund manager to sell an asset because the value has been more broadly recognised by markets. However, if an SC-CO_2-adjusted fair value has been surpassed but the traditional fair value has not (the blue area in Figure 5), it means that although there is an expected upside at the company level, the wider portfolio is being damaged by that company's actions to a greater extent than any remaining idiosyncratic value. To the universal owner, this area is a mirage—the illusion of value that quickly vanishes once emissions are correctly accounted for.

Figure 5: Fundamental Equity Fair Value on a Systemically Adjusted Basis



Source: IEEFA (illustration).

Informing Stewardship Processes

As a result of our systemically adjusted DCF analysis, we are able to identify securities that have too little remaining upside to justify the wider damage caused to the portfolio. Such assets put the universal owner in an awkward spot as continued investment amounts to fiduciary masochism. Theoretically, maintaining a position in the company serves to prop up the share price and maintain the creditworthiness of an entity that is engaging in activity more harmful than its propensity to return further profit, yet to sell would not necessarily be sensible fiscal practice; small divestments tend not to have long-term price ramifications. What is more, the externality would still be felt, but without any of the idiosyncratic upside, while simultaneously removing the opportunity for meaningful direct engagement.

Universal ownership theory would typically prescribe a forceful engagement approach in secondary markets such as public equity, but such a process is well understood to be both time-consuming and costly, especially when an asset owner (such as NBIM) has over 9,000 stocks in its portfolio. Underlining this issue, BlackRock recently sounded warnings over "resource constraints" as it relates to being able to adequately engage with investee companies, despite by industry standards employing an unusually large team devoted to the practice.[22] IEEFA posits that the systemically adjusted DCF modelling outlined above could help define stewardship rules in this regard to focus efforts on achieving maximum fiduciary benefit. This is to say that companies falling in the blue shaded area in Figure 5 should be flagged as requiring 'enhanced stewardship', drastically cutting down the number of companies that require resource allocation.

What enhanced stewardship might entail is at the discretion of the individual owner and is a topic that IEEFA will return to imminently as part of this research series. A sensible process in view of the systemically adjusted DCF modelling example might include immediately triggering a deep-dive transitional assessment. Plans should align at the very least with the level of decarbonisation required to offset costs incurred by the wider universal owner portfolio and have credible interim goals. This would mean there are genuine expectations that the systemically adjusted fair value line in Figure 5 can be raised to the point at which the company once again becomes a sound systemically adjusted investment (the green shaded area) within reasonable time frames. In the case that company management are unwilling to meet the transition goals required to raise the systemically adjusted fair value or have already proven themselves incapable of attaining them (through inertia), escalation must be swiftly and routinely applied. This could be through what universal ownership theory would typically refer to as more forceful measures, including attempts to replace management, redirecting resources to more proactive engagement with policymakers and the entities facilitating carbon-polluting activity (primarily banks), and ultimately divestment.

[22] Responsible Investor. BlackRock stewardship head warns of 'resource constraints' for engagements. 11 March 2024.

New Universal Ownership Frameworks Needed to Meet New Challenges

The main focus of this introductory report has been to highlight the scale of the universal owner problem and exemplify how universal ownership theory should be better integrated into investment and stewardship processes to improve outcomes. Stronger integration of universal ownership theory would allow for better prioritisation of resources, correct for misalignment between the goals of investment teams and those of the universal owner as a whole, and help frame climate-based stewardship in quantitative, fiduciary terms—reducing reliance on more ambiguous guiding principles. It is worth cautioning that the systemically adjusted approach detailed above does not fundamentally prioritise net-zero goals; rather, it represents the most objective and financially responsible approach to reducing the systemic externalities that harm universal owner wealth. Clearly, however, the two outcomes are well aligned.

Better integrating universal ownership theory into normal investment practice will serve to reinforce universal ownership methods, but a systemically adjusted investment approach can only be so effective without a robust, impact-based stewardship framework to accompany it. IEEFA will return to what enhanced stewardship might entail in upcoming research. Particularly in secondary markets such as public equities, direct investee company engagement has typically been favoured, but the hitherto ineffectiveness of this approach in meaningfully altering market behaviour has to be considered. Recent events such as the exodus of U.S. managers from Climate Action 100+ and examples of litigation aimed at dismantling traditional engagement channels (e.g. Exxon versus Arjuna) might imply that forceful engagement tactics are becoming less tenable. In a world where engagement has tried and broadly failed, perhaps now, faced with growing obstacles, the time has come to divert resource to more impactful pursuits.

IEEFA believes that the case for universal ownership remains firmly intact but must evolve in the face of new challenges. Increased attention must be given to overcoming anti-trust concerns, with the facilitation of pass-through voting to go some way in alleviating issues in this regard. As pass-through voting becomes commonplace, asset managers must proactively embrace an educator's role, rallying investors around the notion that universal ownership is in their best long-term fiduciary interests. Greater emphasis must also be placed on indirect engagement with both banks and policymakers, particularly in the case of the latter as it may relate to carbon markets. Finally, IEEFA will also return to the case for divestment. Often employed as a last resort, we contend that divestment is preferable to engagement in situations where the latter gives the impression of action being taken when it is not.

Appendix A: Estimating Actual Carbon-Based Performance Drag

The systemically adjusted analysis in the main body represents an implied carbon-based portfolio performance drag. It seeks to build a picture of how much destruction of wealth is implied by the holdings and as such will depend on ownership levels of large carbon polluters. It does not therefore represent that actual predicted performance drag. To put it simply, if the GPFG did not hold any of the five developed market mega-polluters, the portfolio's implied contribution to shareholder wealth destruction would be US$0 (or 0% when expressed as an implied performance drag), yet the systemic damage would still exist. Below, we calculate the actual predicted performance drag using a similar methodology, making estimates based on the likely proportional damage absorbed, rather than the portfolio's contribution to systemic damages (rebased by AUM).

In this version, the total social cost of emissions is firstly calculated by applying the SC-CO_2 to the entirety of each polluter's emissions. We then calculate the proportion that will be shouldered by the portfolio itself (1.5% of that total, given that this is the approximate level of ownership the GPFG holds in all listed companies globally[23]). We can use the portfolio's weighted payout ratio to convert damages into destruction of income (earnings that would otherwise have been paid out in dividends and other distributions, were the portfolio not subject to carbon-based externalities). Absent portfolio-specific data, we proxy this figure to be roughly in line with global capital markets at 40.5% (based on the MSCI AC World index). By translating 'absorbed damage' into lost shareholder wealth this way, we arrive at an estimated portfolio performance drag of -0.27% (based on current AUM).

Table A 1: GPFG-absorbed systemic damage translated into loss of income (assuming 1.5% ownership of global capital markets and SC-CO_2 is US$185)

	Total scope 1+2+3 CO_2 equivalent (tonnes, millions)	Total social cost of emissions (US$ millions)	GPFG average ownership (%)	Absorbed cost of emissions (US$ millions)	Payout ratio* (%)	Implied lost income (US$ millions)
ExxonMobil	938.0	173,532	1.5%	2,603	40.5%	1,055
Shell	719.5	133,109	1.5%	1,997	40.5%	809
BP	687.3	127,145	1.5%	1,907	40.5%	773
Rio Tinto	673.7	124,635	1.5%	1,870	40.5%	758
BHP Group	661.8	122,435	1.5%	1,837	40.5%	744
Total (US$ m)		680,856		10,213		4,139
Total (as % AUM)				**0.67%**		**0.27%**

Source: IEEFA, MSCI, NBIM (GPFG holdings taken from reporting as at 31 December 2023).
**In the absence of full portfolio data, payout ratio is proxied as that of the MSCI AC World Index and calculated as one-year trailing dividend yield/earnings yield, taken from MSCI as at March 2024.*

[23] See Norges Bank Investment Management. About us. and InvestESG. Owning a slice of the global economy responsibly with TNFD | NBIM. 29 February 2024.

This would indicate that the GPFG is responsible for proportionally more wealth destruction (-0.36%) than it is ultimately subjected to (-0.27%). This makes sense given the GPFG holds stakes in these five mega polluters that are in general larger than its average 1.5% holding. This observation of course is not entirely fair because the GPFG owns proportionally higher stakes in developed market carbon polluters and holds no exposure to other major carbon emitters such as Saudi Aramco or Coal India, for example. Ultimately the analysis would need to be extended out to cover all companies, including those not owned by the GPFG, to accurately expose the full extent of a carbon-based performance drag.

Appendix B: Extending Systemically Adjusted Analysis

The systemically adjusted performance drag discussed in the main body is provided as an illustration. Simplifying assumptions have been made to build an estimate of the implied loss of earnings, which can be translated into shareholder wealth destruction. Below we discuss some of the assumptions and simplifications which future analysis might develop on, to build a more accurate understanding of wealth destruction.

- Perhaps most obviously, the illustrative analysis provided covers only the emissions of five investee entities. This would also need to be extended to cover not only all companies owned by the GPFG but additional sources of emissions that are not. This becomes crucial to calculate the entirety of the impact as well as the split of self-harm versus external harm. This would allow for disaggregation of costs over which owners can exert some degree of meaningful direct influence (e.g. through engagement). It would also underscore the degree to which universal owners will need to divert focus towards engagement with governments, regulatory bodies and policymakers to exert influence over areas of the global economy outside of their control.

- If we are to extend coverage to all companies, we must consider how to redress double counting of emissions when assessing the carbon-emitting universe in its entirety—a method of fairly attributing emissions would be required.

- The analysis provided does not make a distinction between different emission types. It uses scope 1+2+3 CO_2 equivalent data and applies SC-CO_2 to that number. Methane, for example, will have a much more intense but shorter-lived contribution to climate-related damage. Ideally, the analysis should reflect these differences.

- Additionally, analysis would need to make adjustments at the investee company level for any environmental benefit that the company's activities or products bring to the system as a whole. Simply applying a cost to emissions does not factor in any avoided emissions as a result of their output. Perhaps this highlights the need to use not just scope 1+2+3 emissions in calculations but also scope 4[24] (the subtraction of which could feasibly turn total emissions negative). For now, however, avoided emissions remains a dataset in its infancy and would be subject to considerable assumptions. Manual amendments would need to be made or exemptions applied based on industry and activity.

- The social cost of carbon may not be fully captured in the earnings of financial market participants. Although an area of study in its infancy, more specific estimates of the 'economic cost' of carbon could be developed, i.e. that focus more directly on damage to the private sector as opposed to other economic participants (e.g. consumers). Arguably, the private sector will ultimately capture these damages if, for example, consumer patterns change as a result of their own worsening economic positions, but the relationship is not likely to be directly proportional. The analysis, in calculating a performance drag, also does not factor in the idiosyncratic benefit that a universal owner will have achieved through the

[24] Defined as "emissions avoided when a product is used as a substitute for other goods or services, fulfilling the same functions but with a lower carbon intensity". See the GHG Protocol working paper.

production of externalities and therefore is the gross drag, without offsetting benefits. Because of these factors, the analysis likely reflects an upper bound of net damages that will accrue to shareholders at any given level of SC-CO_2.

- It is worth noting that the illustrative analysis does not seek to revalue assets in light of externalities, but instead focuses on the question of how much destruction of wealth is being caused (regardless of whether the market is correctly pricing assets). The analysis offered therefore shares the same short-sightedness, but in doing so, serves to ground findings in line with near-term, single materiality market expectations.

- The analysis assumes that damage is distributed evenly when the holdings of a universal owner, although broadly representative of the global economy, may be better protected from the brunt of externalities when compared to a global economic baseline. Although uneven absorption is likely to result in minor variations at the system level (some stocks will absorb more than the average, others less, with the overall impact evened out), attempts should be made to discern damage absorption rates which can then be applied to owned damages. This is perhaps more important in the case of determining actual predicted performance drag (as demonstrated in Appendix A).

- A further notable adjustment that IEEFA would propose be included as part of climate-related externality modelling relates to lobbying activities. This is an area of negative environmental contribution that has a clear impact on the universal owner which is not tied to the absolute level of emissions (although a correlation is likely) and is extremely difficult to quantify in terms of impact. We would encourage universal owners to make best efforts to consider this at the company level as part of any externality cost modelling. For now, lobbying activity may need to remain covered qualitatively as part of normal stewardship investigations.

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

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Alasdair Docherty is the Sustainable Finance & Data Analyst for IEEFA's European team. His research predominantly covers asset management and equity markets in Europe.

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