

SUMMARY REPORT

SIRI Pathways to Consensus: “Re-Writing the Source Code of Capitalism”

June 9-10, 2025

BACKGROUND INFORMATION

This is a summary report distilled from a two-day convening on “Rewriting the Source Code of Capitalism” (which we also refer to as the Pocantico Convening 2025 or PoCo25) organized by the Sustainable Investing Research Initiative (SIRI) at Columbia University and the Rockefeller Brothers Fund.

Capitalism can be understood as an immense system of code made up of millions of assumptions, theories, and practices through which information is processed, risks are assessed, judgments are made, and money is invested to produce goods and services.

As the world has faced systemic change, some pieces of that code have become stale “legacy code” because they were designed at different times in response to different problems. In the face of fundamental systemic shifts in our ecosystem, technology, and society these failing bits of code are distorting investment decisions in a manner that is undercutting the long-time viability of our planet and civilization. Such distortions must be identified, reviewed, and updated.

We have identified three core concepts that need to be updated in order to bring capitalism into alignment with the systemic ecological, social, and technological changes sweeping the world. These are:

- The definition and boundaries of fiduciary duty to include intergenerational dimensions;
- The shift in risk-return evaluation from individual firms and portfolios towards industries and systems;
- The continued need for improved measurement and global standards to achieve these objectives.

To succeed, and to meet the challenges of the 21st century, it is important to provide a platform for discussions—a platform that brings together and fosters dialogue among the key players (from the private and public sectors, policymakers, law, and academia), that explores pathways to consensus and a shared vision, and that stimulates the co-creation of a more sustainable world and inclusive prosperity. Moreover, it is important to drive forward scholarship and education in

this field to inform practice and educate the next generation of leaders in business, investment, and policy. The Sustainable Investing Research Initiative (SIRI) within Columbia University’s School of International and Public Affairs offers such a platform.

The “Rewriting the Source Code of Capitalism” convening, co-hosted by SIRI and the Rockefeller Brothers Foundation, brought together leading experts from around the world, including academics, industry experts, innovators, corporate executives, investors, philanthropies, standard setters, lawyers, and policymakers. The participants reviewed and evaluated each of the three concepts, and discussed:

- The assumptions of the "stale code" that can lead to damaging outcomes (because of outdated assumptions or invalid implementation) and need to be corrected;
- The key hurdles and leverage points to rewrite the source code;
- The key pathways and action steps needed – through research, education, dialogue and practice, policies – to overcome the identified obstacles.

The convening was under the Chatham House Rule. We have prepared a high-level summary of the key insights from this convening. Our hope is that these insights will be helpful in informing the plans and actions of each participating organization. SIRI will also be building its future convening, education, and research programs around some of these themes. We believe that collaborative efforts across such topics will help drive forward the alignment of capitalism with the systemic ecological, social, and technological changes of today’s world.

Setting the Context

THE CHALLENGE OF THE MOMENT

Two speakers helped set the context of the convening. The first speaker described the challenges of the moment. This speaker argued that for people to work collaboratively towards a shared objective, they must build from a common understanding of the situation. He proposed two ideas: i) that we are in the midst of a major struggle between paradigms, and ii) that the most effective approach to reform would be not to “accept” or “reject” capitalism but to identify and redesign the dysfunctional elements, like updating a vast system of code.

He contended, in a manner comparable to other major (and painful) moments in intellectual history, that we are transitioning between two distinct paradigms of capitalism. The first, rooted in extraction economics, shareholder primacy, and maximizing shareholder value, has relatively seemed simple and clear for a century, even though it had led to regular intervals of financial collapse, such as the Great Depression, the dotcom and subprime mortgage crises, and the Great Recession. These bursts revealed that the first paradigm of capitalism is structurally fragile and given to severe misallocations of capital. As the annual financial costs of climate change are

moving into the trillions of dollars—even without accounting for currently unmeasurable human and biodiversity damage—the distortions and contradictions of the old paradigm are on the rise.

The second paradigm, which has been emerging steadily for nearly 50 years, acknowledges that our planetary systems are finite. Major international reports and agreements have identified our planetary transformation and warning of its consequences, such as the 1987 Brundtland Commission report (which popularized “sustainable development,”) the Rio Summit (1992), the Millennium Development Goals (2000-2015), and the current Sustainable Development Goals (2016-2030). These developments have led to the formation of tens of thousands of sustainability organizations and a fundamental transformation of the cultural and ideological worldview by especially younger generations.

The global problem lies in the uneasy coexistence—and outright conflict—of these two competing paradigms: i) the dominant paradigm, which ignores or undermines sustainability, and ii) the emerging paradigm, which asserts that pursuing it leads to self-destruction. The debate centers on reconciling, merging, or engineering the transition between these perspectives.

For at least two decades, promising signs of reconciliation emerged as major institutions committed to sustainability. Right now, however, we are in the midst of a global backlash. Historically, such reactionary efforts occur when an old paradigm, whose dominance and merits were unquestionable, is increasingly seen as deficient and vulnerable. Arguments for its superiority are questioned, authoritative documents and institutions are challenged, and its logic is dismissed. Under such circumstances the new paradigm gradually becomes a contender for power.

When this crisis reaches a point, proponents of the old paradigm may resort to force, authority, and even violence. Concerned that the superiority of the ideas is no longer immediately accepted, they often move to threats. Their tone becomes coercive towards the proponent of the emergent thinking: you may not use these words, have these thoughts, advocate for these changes, or build alliances and conversations in its favor. They do so because the new ideas are perceived as direct threats to their identity, safety and prosperity. And they seek to implement forms of punishment. This pattern has repeated itself many times in Western intellectual history. There was a Reformation, and then a Counter-Reformation, a Revolution and then a Counter-Revolution (and temporary restoration of monarchy). In the United States, we endured a brutal Civil War to abolish slavery but only to see it surreptitiously reinstated in the Southern states through Jim Crow laws.

We have just emerged from a preliminary surge of movement towards the emerging paradigm. Over the past two decades, major companies worldwide created and submitted sustainability reports; governments, corporations, investors, and educational institutions created diversity, climate change, and sustainability programs; and environmental and social issues were accepted as board-level concerns, which is the essence of the ESG claim. The speaker argued that this movement produced panic among those who had previously dismissed the emerging paradigm as humorously unlikely to be accepted. They suddenly realized that the convictions and prosperity

that they believe are rooted in the old paradigm might actually disappear. So, they have struck back. We do not yet know how long this period will last. Ultimately, a refusal to address the contradictions within the old paradigm or the dangers of systemic risk does not make them go away. The counterattacks can be brutal, cause damage, slow progress, and demoralize those who believe the emergent paradigm is in danger of being crushed.

Most of history shows otherwise, the speaker pointed out. Just as rising water can be blocked by a seawall but can still flood an area if it comes up through the water table, the contradictions of the old paradigm are too strong and the ideas and the urgency of the new paradigm are too widely accepted for them to be eradicated—unless its proponents lose heart and hope. Given this, the speaker concluded, we can anticipate that the current fever will break. And when that happens must be ready with a coherent, interconnected program to transform our economy. That is at the heart of our conversation. This is exciting because all the pieces are here. The intellectual advancement of humanity can be impeded but not stopped. We must be motivated, strong, brave, and willing to move forward. Knowing all of the convening participants, the speaker was confident that we can ultimately succeed.

Source Code of Capitalism

A significant portion of the discussion on capitalism centers on normative judgments, determining its “goodness” or “badness.” While this is inevitable, it is not always useful. Instead, one should focus on understanding the system of capitalism, including its design, inputs, outputs, and outcomes.

The proposed narrative compares capitalism to a complex system of algorithms and elements, some arbitrarily assembled, others designed with good intention but now malfunctioning, especially in less privileged areas. Despite their functional appearance, these calculations and conclusions are erroneous. Software designers are aware of the problems of code obsolescence. Complex systems have stale, legacy, and non-functional code. They identify, extract, rewrite, and replace these components.

This is comparable to our task. The convening’s title, “Rewriting the Source Code of Capitalism,” reflects this. If we accept the analogy, the question is: which code pieces need investigation, reinterpretation, and possibly rewriting? Areas for improvement include fiduciary duty, system-level investing, and sustainability disclosure.

This convening examined three interrelated code pieces:

- Fiduciary duty: A forward-looking obligation to address future risks, requiring consideration but not necessarily specific conclusions.
- System-level investing: Helps move investors beyond Modern Portfolio Theory’s focus on a single firm’s risk-return ratio to consider the larger vulnerabilities and opportunities of interdependent industries.

Sustainability disclosure: Must balance the analysis of sustainability risks on the financial performance of the firm with the firm's impact on the larger systems on which it depends.

SUMMARY OF THE PUZZLE: THE LINKAGE BETWEEN FIDUCIARY DUTY, SYSTEM LEVEL INVESTING, AND SUSTAINABILITY DISCLOSURE

The second speaker summarized the puzzle, highlighting the interlinkage between fiduciary duty, system-level investing, and sustainability disclosure. These three concepts pose critical dilemmas for financial fiduciaries, investors, corporations, and academics. They have existed for decades, but climate change forces us to rethink our professional duties.

The first dilemma involves fiduciaries, specifically those (such as pension trustees) who are subject to the duty of intergenerational impartiality. This requires fiduciaries and trust officers to consider equally the needs of current and future generations. Trust-law legal experts have recently called renewed attention to this duty, asking how trustees should best satisfy its demands when confronted with climate change. Should they, for example, reallocate funds from today's beneficiaries to address future climate-related crises? How can they best satisfy both needs in the face of climate change?

The second dilemma is similar to today's investment managers' pressure to address long-term climate risks in their portfolios. To invest clients' funds in a future without radical climate disruptions, they must confront the fact that fossil fuels are a primary source of wealth generation for their current portfolios across all asset classes. How can they ignore these damaging sources while simultaneously investing in their portfolios and the underlying environmental and social systems that support future investment?

Corporate managers face a similar situation. They have debated whether they have a primary duty to allocate free cash flow to stockholders or other stakeholders. The speaker argued that this debate was inappropriately resolved in favor of maximizing shareholder wealth, which benefited only shareholders. Resolving this debate is painful when the stockholder is ourselves with our current needs and the stakeholder is the global climate we will live in tomorrow.

The third dilemma relates to those seeking to measure the sustainability quotient of their portfolios. We have little in the way of tools adequate to quantify and value the impacts and outcomes of our investments when it comes to climate change. In effect, we have no metrics to express the pricelessness of nature. Similarly, a stable economy is priceless but not worthless, highlighting the irony of the term "priceless." It is supposed to denote something valuable beyond market forces, yet something "without a price" is often disvalued. Measuring social responsibility, especially sustainability and impact, is challenging. Quantifying climate change impacts like glacier melting and coral reef destruction is difficult without economic terms.

These dilemmas have been uncomfortable for decades. Over that time, the need to resolve them has become increasingly acute. The time is now ripe for tackling this task. Times change. Ideas

mature. Reality intrudes. A fundamental change and adaptation is urgently needed. Climate change fundamentally alters the world, and our past tools—fiduciary duty, investment theory, and sustainability measurement—no longer function as expected, but these tools are our best. They need to and can be adapted to regain effectiveness.

The three dilemmas share a common thread: balancing the present and future, investing in both, and measuring our responsibility for impact. Though challenging, we instinctively know this is essential. Serving two masters—present and future, private and public, quantitative and qualitative, measurable and immeasurable— may seem unpleasant and impractical but it is important. Inclusive prosperity requires the integration of these ideas, and the development of tools that permit that to be pursued effectively.

An informed discussion can help us envision changes in practice and theory, devise a new lens for examining these disciplines, and adapt to the rapidly changing world. It can lead to action. Current dilemmas faced by fiduciaries, investors, and sustainability measurement concerns are interconnected. This is the right time, place, and people to understand these interrelationships, what we need to do, and how to catalyze necessary changes. The convenings title “Rewriting the Source Code of Capitalism” highlights the need for transformation both in practice and academia. While the road may be bumpy, there is a way to distinguish and follow a path forward.

Lastly, it is important to recognize that the academic world exercises an outsized and remarkable influence on the world of finance. Most portfolios worldwide are now managed according to the precepts of Modern Portfolio Theory. MPT was developed by a series of academics in the 1950s, 1960s, and 1970s. It was not actually implemented until the late 1970s when index investing took root. It was the academics, well before the practitioners, who led the charge, and it was to them that the Nobel Prizes were ultimately awarded. That is why it is important to focus academics on these dilemmas—both in terms of research and education of the current and future leaders in business, investment and policy. Without the academic imprimatur, changes to theories of fiduciary duty, investment management, and sustainability measurement will gain little traction. This is precisely where the importance of SIRI’s leadership comes in.

Implications for the Evolution of Key Theories in Finance and Sustainability, and Missing Gaps

The first part of the discussion examined the various implications of systemic crises for the theories of Fiduciary Duty, Investment Management, and Sustainability Measurement and Disclosure. Specifically, the participants discussed the evolution of these theories as well as the underlying assumptions of the previously mentioned “stale code.” The participants also identified the missing gaps to effectively enable a paradigm shift.

THE EVOLUTION IN THE THEORY OF DUTY OF IMPARTIALITY

A pension law expert provided an overview of the obligations of pension fund fiduciaries regarding sustainability and systemic risks. The below provides a summary of key insights of this overview. [Disclaimer: Please be aware that this summary was not written by legal experts. For specific legal advice and guidance, readers should consult with their attorney or legal expert.]

The Duties of Impartiality and Prudence in Fiduciary Duty

Questions about fiduciary duties are common. Fiduciary duty—particularly for pension funds— involves strict requirements designed to guide the actions of trustees and to protect beneficiaries. The pension law expert pointed out that it is important to note that pension law already contains existing requirements for trustees to evaluate the emergence of future risks.

The Freshfields Report—authored by Freshfields Bruckhaus Deringer and commissioned by PRI, UNEP FI and The Generation Foundation—provides a comprehensive analysis on the extent to which legal frameworks enable investors to consider impact in their activities across 11 jurisdictions: the EU, Australia, Brazil, Canada, China, France, Japan, South Africa, the Netherlands, UK and the US. provides a comprehensive analysis. The report outlines various interpretations of fiduciary duties, depending on the jurisdiction’s legal framework. Yet, it lacks substantial legal guidance regarding fiduciary obligations.

Fiduciary duties vary based on context, jurisdiction, and type. For example, pension, foundation endowment, corporate director, and registered investment advisor fiduciaries all have a Duty of Loyalty and Duty of Care, but their interpretations differ. Distinguishing these types is crucial as they have different obligations.

When a breach of fiduciary duties is alleged, the specific context and type of fiduciary must be taken into account. In the US, pension fiduciaries have a particularly powerful Duty of Loyalty, which in turn mandates the highest standards in avoiding conflicts of interest. Fiduciary trustees must act *solely* in the best interests of beneficiaries and participants over the specified time horizon. (Other kinds of fiduciaries—for example, the trustees of foundations, universities, religious institutions or other non-profit organizations—can take broader interests into account aligned with their organization’s mission. The directors of corporations, in turn, have fiduciary obligations to act in the company’s best interests, while Registered Investment Advisors have principles-based standards.)

Our discussion focused on pension fiduciaries. Their two core fiduciary duties are i) the Duty of Prudence (or Care) and ii) the Duty of Loyalty. These duties exist to ensure that fiduciaries act in the best interests of plan beneficiaries.

- The **Duty of Prudence** obligates fiduciaries to act with due care, skill and diligence, investing as an ‘ordinary prudent person’ would.

- The **Duty of Loyalty** obligates pension fiduciaries to act in the best interests of plan participants and beneficiaries, prioritizing their interests above all others.

The **Duty of Prudence** is crucial in sustainability. Often concerns are raised about the prudence of actions. The key questions are:

- What processes were used to inform the decision?
- How thoroughly were they performed?
- How were the conclusions justified?
- How do those conclusions relate to the pension fund's larger goals?

Prudence, a forward-looking approach, emphasizes diligence and evaluates fiduciaries based on the process they used, not outcomes.

In turn, pension fiduciaries' **Duty of Loyalty** focuses solely on participants and beneficiaries' interests over relevant time horizons. Time horizons vary and can be based on actuarial tables, intergenerational considerations, discretion, and other factors. The time horizon chosen by the fiduciaries or required by law is one of the most critical factors in determining the degree to which fiduciaries of pension systems are obligated to consider future economic and ecological conditions

The **Duty of Impartiality** is derived from the Duty of Loyalty. The Duty of Impartiality for pension beneficiaries requires trustees to act fairly and reasonably when making decisions that affect different classes of beneficiaries, such as retirees, who receive payments today, and active employees, whose payments may not come for decades. For trustees to honor the duty of impartiality, they must consider the financial and other interests of all beneficiaries, including both older and younger generations.

While critiques of sustainable investment typically take on a short-term perspective, pension funds have much longer (and diverse) time horizons, spanning 20 to 50 years, or more. The Duties of Loyalty and Impartiality require pension fiduciaries to consider both short-term and long-term interests. For instance, a pension fund with a 40-year time horizon has vastly different interests and exposures to the portfolio company's risks compared to a 102-year-old annuitant. As a fiduciary, a pension trustee must balance these interests.

The Department of Labor's guidance on sustainability considerations for **Employee Retirement Income Security Act (ERISA)** plans has significantly influenced fiduciary approaches. The Department of Labor regulates ERISA plan assets, including engagement standards. Governmental pension plans, while not subject to ERISA, seek its guidance when state law is unclear, ambiguous, or when an issue arises not contemplated by state law. Historically, the Department of Labor's rules have influenced various aspects, including fiduciary treatment under ERISA. ERISA's persuasive authority isn't binding, but it fills gaps where state law is silent or ambiguous, giving states more room to interpret fiduciary duties. However, there are challenges, including anything

that interferes with fiduciaries' discretion, as seen in pro and anti ESG bills. Sustainability issues have been a point of contention. Political headwinds, such as the threat from the current Administration about tax-exempt status, also pose a challenge. While a state could pass a law with a more progressive interpretation of fiduciary duties, the Federal government could revoke tax-exempt status. Investors are cautious not to provoke the government and continue under the current law.

Each Administration has taken different approaches. In the 1980s, an "all things being equal" test allowed consideration of external factors in investment decisions. However, the 2018 rule changed this approach, establishing the pecuniary standard, which limited fiduciaries' consideration to financial interests. Upon taking office, the Biden Administration suspended this rule.

At the time of PoCo25, based on current indications, the participant anticipated a movement to codify the Scalia-era Department of Labor (DOL) guidance, which would shift the burden of proof onto fiduciaries, requiring them to demonstrate that ESG considerations are material to risk or return. This rule would create administrative hurdles, including establishing a process, documenting it, and demonstrating the prudence of considering ESG for investment decisions. Notably, it does not address proxy voting and effective proxy use. Fiduciaries, considered assets under ERISA, have some latitude in managing their proxies. They must treat them like any other investment decision, adhering to future guidance. However, the Administration suggests they may not need to consider proxies the same way. [*Update: since PoCo25, in a recent letter to the U.S. Court of Appeals for the Fifth Circuit related to a case originally filed as Utah v. Walsh, the DOL confirmed it will issue a new rule replacing the ESG Rule "Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights," which was previously adopted in 2023 by the Biden Administration.*]

Current law allows fiduciaries to consider sustainability issues. They can determine appropriate time horizons and assess how sustainability impacts risk and opportunity. Impartiality enables them to consider the long term and how portfolio companies' practices affect risk and return. Therefore, the current framework does not hinder sustainability consideration. The main barrier is a mindset that prioritizes short-term gains over long-term sustainability. Many investors compare themselves to determine appropriate practices. The lack of clarity in the law hinders institutional investors' consideration of sustainability issues. They observe each other's actions and follow suit if one institution takes the lead. Additionally, state-by-state variations in the application of ESG principles further complicate matters.

A patchwork of law emerges from pro-ESG and anti-ESG legislation, subjecting investors to varying constraints. This is the most significant challenge in the United States. These legislations differ based on state law. This results in a patchwork of state laws, with fiduciaries constrained differently depending on their location. In other words, their position in the US determines their constraints.

According to the legal experts participating in the convening, the code of capitalism is not necessarily broken. Fiduciary duties under trust law are constantly evolving due to prudent processes. Some court cases state that fiduciaries should not freeze their duties based on current understanding. As Modern Portfolio Theory became widely accepted, trust law had to adapt. Fiduciary views on diversification and trust law continue to evolve as new information becomes available.

Emerging UK Proposals for Giving Beneficiaries the Right to Vote on Fund Allocation

An attorney offered insights into innovations in corporate governance and fiduciary duty that are currently unfolding in the UK. Efforts are underway to reimagine capitalism. In particular, proposals are emerging for giving working individuals with retirement savings the democratic right to vote on their fund's allocation. This is comparable to the rights of corporate employees.

Fiduciary duty is not meant to silence capital providers. Millions of working people lack say in how their capital shapes the world. Almost no one can elect or hold accountable those who make decisions on their behalf in capital markets. We can break this cycle as was done in 1918 when an all-male British Parliament finally granted women the right to vote after years of campaigning. Two years later, the US followed suit. Women's suffrage led to important legislation benefiting women and children, something that had not happened when they lacked voice. This should be celebrated and learned from. This is the kind of transformation people are yearning for now. If democracy entails power shared in the systems that shape our lives, it must include the economic system.

Given the significant global capital held by pension schemes, granting working people democratic rights and pensions is crucial. While the current mantra emphasizes maximizing returns, John Stuart Mill and Adam Smith argued that markets serve human flourishing, not solely for-profit generation.

Advocates, such as the non-profit organization ShareAction, advocate for reforming the UK's pension system. For example, on June 5th 2025, the UK Government introduced the Pension Schemes Bill. ShareAction formed a broad coalition of pension savers, trustees, civil society leaders, asset managers, consultants, foundations, lawyers, and unions. They urged Parliament to amend the Bill to clarify conflicting legal advice and ensure accountability for schemes' members' best interests. Their proposed amendment mandates a long-term investment horizon, holds schemes accountable, and allows them to consider investments' impact on members, views, and living standards. They advocate for equitable power, voice, and agency for working people saving for retirement.

The potential outcomes of such advocacy work is powerful. Capital markets could serve the economic interests and broader priorities of working families across economies. Increased investment in pension schemes could accelerate the clean energy transition, driven by member demands and benefits. Similarly, they may increase investments in affordable housing, nature

restoration, clean air, and public health, reflecting the best interests of savers. Pension funds may also press investee companies to pay living wages as workers collectively demand such compensation. While this vision may seem utopian, it embodies the fundamental logic of ownership, similar to women's voting rights, which initially seemed inconceivable but was secured. To achieve those goals, collective deliberation on shared priorities and trade-offs is imperative.

Various efforts are underway. For example, ShareAction aims to establish a pilot program in the UK for several reasons. The UK is a logical location for experimenting with capital markets, especially in the context of democratic development in the upcoming critical years. They are preparing to partner with forward-thinking trustees and schemes that grant members a voice in investment decisions. The aim is to create a transformative environment. They are eager to collaborate with their counterparts across the Atlantic. In conjunction with legislative reforms addressing fiduciary duties, their initiative aims to rewrite capitalism's fundamental principles by and for the working people most affected by its impact.

Beyond the context of the UK, the idea of teachers and other working people having a stronger voice in investment is attracting growing interest from around the world. In the spirit of the concept of fiduciary duty prioritizing the financial interests of beneficiaries over broader interests, one could consider the standard of living to potentially justify actions enhancing members' well-being, such as affordable housing, renewable energy investment, and small business financing. This perspective offers a legal approach to thinking about members' interests beyond financial compensation. For example:

- A large UK pension scheme, Cushon, effectively sought an opinion that living standards are a financial consideration.
- The second-largest pension fund in Europe has committed to improving the quality-adjusted life years of its members. They have also made commitments around carbon.
- In some cases, pension funds have made investments with an explicit goal of increasing affordable housing, as they had in one case a pension.

Lastly, some scholars have attempted to extend fiduciary duties to funding stream impacts, such as state and local issues affecting the state's ability to pay contributions and maintain the plan's sustainability.

THE EVOLUTION IN THE THEORY OF SYSTEMIC RISK AND REWARDS

Participants also examined the evolution in the theory of systemic risk and rewards, as distinct from portfolio risks and rewards. This discussion explored system-level investing, its current state, and key principles. It also identified notable moonshots and areas for focus in transitioning from legacy code to living systems.

Prominent asset owners recognize the connection between managing system-level risks and rewards with fiduciary duty, but why aren't more investors adopting this approach?

Participating experts argued that the root cause is that our system's design does not favor managing significant systemic risks. Modern Portfolio Theory (MPT) and sustainable and impact investing show this. The primary challenge is focusing on short feedback loops. For instance, mainstream investors rely on quarterly reports, limiting analysis of company performance. Similarly, ESG metrics and impact Key Performance Indicators (KPIs) in sustainable investment often restrict analysis to individual companies or portfolios, overlooking broader systemic dynamics.

This phenomenon results from a fallacy of composition, as proposed by economists—the mistaken belief that what is true for an individual or a part of an economic system is necessarily true for the whole system or group. It suggests improving a single company will lead to significant transformative change within a portfolio, but this logic is flawed and does not reflect system complexities.

The primary issue, especially in sustainable and impact investment sectors, is that our efforts are built on a foundation that is being eroded. Extant theories ignore the interrelationship between business and investment activities on system-level challenges. For example, a key underlying assumption of the MPT (the most influential theory in finance practice and research) is that systemic risks are exogenous, i.e. it assumes that there is no impact of investing on systemic risk (such as climate risk, nature-related risks, etc.). And, vice versa, MPT neglects the potential increases in systemic risks (if those crises remain unaddressed) over time and their implications for the portfolio's future financial performance. The book "Moving Beyond Modern Portfolio Theory: Investing That Matters" (co-authored by John Lukomnik and Jim Hawley) helps illustrate this point. It convincingly argues that a very high percentage (over 70%) of investor returns do not come from seeking alpha; they stem from building beta or the economy's overall health. In short: MPT needs to be modernized—systemic risks need to be endogenized (i.e. a feedback loop needs to be incorporated) to account for the interrelationship between our investment activities and system-level challenges such as climate change, biodiversity loss, social inequality, poverty, etc.

Essentially, both positive and negative externalities on the system are being ignored in traditional finance theory and practice. They assume governments and intergovernmental entities will address such externalities and implement effective regulations. Yet, this is another strong assumption that fails in reality—extant theories in economics, finance, and business fail to consider the political feasibility and implementation of such regulations.

System-level investing has emerged in recent years. It aims to align capital and strategic influence to safeguard and strengthen market conditions that drive long-term value. For example, The Investment Integration Project (TIIP)'s theory of change centers on institutional asset owners, particularly those with high fiduciary thresholds. Once their problem is solved, the rest of the

market will likely follow. TIIP collaborates with diverse investors, guiding them in understanding these issues, adopting system-level investment approaches, and translating knowledge into policies, programs, and practices. The aim is to help investors bridge the divide between portfolio-level and system-level focus, considering idiosyncratic, systemic, and systematic risk. Diversification alone cannot resolve this disparity. The book “21st Century Investing: Redirecting Financial Strategies to Drive Systems Change (co-authored by William Burckart and Steve Lydenberg) provides an overview of various tools and techniques investors can apply to engage in system-level investing.

To help various investor types transition to system-level investing, one needs to understand their awareness, incentive structures that either facilitate or hinder investor participation, action requirements, their organizational structures and processes within institutions, and their fiduciary duties. Increasingly, investors are aware of systemic risks and the need to manage them, but numerous barriers prevent them from doing so effectively. These challenges must be acknowledged and addressed.

Effective and coherent communication is critical and needs to be adjusted to the specific needs and objectives of the various investor types, including philanthropies, family offices, asset owners, institutional investors, and others. Similarly, the activation process for trustees differs from that for CIOs and actuaries. To make progress, the following levers were suggested:

- Establishing a Fiduciary Futures Lab, leading training sessions and fostering a community of practice.
- Asset owners, managers, and fiduciaries are in need of effective communication skills to advance the field. Many discussions are based on disproven ideological claims, misunderstandings, lack of evidence, etc. Building on the Freshfields Report and other international efforts, one needs to continue to promote greater understanding of the legal framework and interpretation of fiduciary duties—the Duties of Prudence, Loyalty, and Impartiality—for the various investor types across different jurisdictions to facilitate the transition.
- Many investors are passive investors. Finding ways to enable them to adopt a more active approach to investing is needed. For example, a blue-beta index or benchmark could be developed. This index would be based on system needs, not just the best-in-class companies.
- Consider:
 - Developing a system-level investing scorecard.
 - Holding managers and corporations accountable.
 - Encouraging managers to act on system needs and develop a manager assessment for systemic risk.
 - Strengthening efforts to enhance scenario analysis among investors.

- There is a need for additional evidence (including their financial and sustainability performance) of the effectiveness of various investing strategies. To provide such evidence, data is needed. This highlights the need for (standardized) disclosure of such information. In absence of mandatory disclosure requirements, investors can request such information from their portfolio companies. Asset owners are especially well-positioned to lead this effort.

The Potential benefits of Using AI

The session on system level investing concluded with a discussion on the potential benefits of using AI. Using AI for analyzing the data can potentially be helpful to inform the development of system-level investing strategies, assessing their effectiveness, and for reporting (financial and sustainability) material information.

AI has transformative potential for many reasons. It can, for example, help convert unstructured data into structured data and hereby facilitate the integration of qualitative and complex information into work processes. Furthermore, the administrative burden on companies can potentially be reduced substantially, and employees might be able to be redeployed to higher-value activities. (This is important because the European Union is currently undergoing a retreat from its commitment to double materiality because of concerns about the alleged burdensome expense of measurement disclosure and its anticipated negative effect on European competitiveness.)

Overall, the potential strategic value of using AI is expected to be significant—it can facilitate the integration of valuable information in the investment decision-making process and likely reduces reporting costs. Yet, AI is not a panacea and comes with its limitations, e.g., AI cannot help with the data collection per se. That is, AI can be helpful in analyzing the data, provided that the data is already collected. The use of AI is a promising area worth exploring further.

THE EVOLUTION IN THE THEORY OF SOCIAL AND ENVIRONMENTAL METRICS AND DISCLOSURE REWARDS

The participants then discussed the evolution in the theory of social and environmental metrics and disclosure, as distinct from financial metrics. As the previous discussions on fiduciary duty and system-level investing already highlighted, measuring and disclosing material financial and sustainability data is critical to inform and support the investment decision-making process, to hold managers and corporations accountable, and to provide evidence of the effectiveness of (system-level) investing strategies and impact.

At the root of the problem is the disconnect between finance and the real economy. Financial and real economies are intertwined. A viable path to sustainable and inclusive prosperity needs to acknowledge this interrelationship. Public policy is crucial, and capital markets can be a powerful

catalyst for transformative change. Yet, policymakers and capital market leaders often fail to act decisively. People tend to wait for someone else to take the lead. This collective inaction has hindered progress.

To trigger systems change, participants highlighted that the transformation of current practices needs to be accelerated. Two leading reporting standards include the GRI Standards (from the Global Reporting Initiative) and the SASB Standards (now part of the IFRS Foundation).

- The Global Reporting Initiative (GRI) is an independent international organization that provides a sustainability reporting framework, which is outcome-oriented, i.e. it considers the implications of corporate activity for society and the natural environment.
- In contrast, the SASB Standards are inward-oriented, identifying the sustainability-related risks and opportunities most likely to be financially material to an organization.

The GRI standards are widely used globally and reflect the strong market demand from the corporate community. GRI is continuing to make significant strides in advancing the standards, which are developed within a multi-stakeholder framework. Despite its leadership in outcome-oriented sustainability reporting, improvements are needed. In particular, participants highlighted the importance of considering the role of impact reporting in the broader context. Understanding how to measure impact on the broader ecosystem (that goes beyond the mere reporting of firm- and portfolio-level data) is critical.

To make progress in sustainability reporting and shift capital, **a key question is how to effectively internalize the externalities (and thereby price them into decisions)?** The following key hurdles were mentioned by participants:

- Sustainability reporting needs to consider impacts (externalities), risks, and opportunities holistically. It needs to signal companies' relation to planetary limits.
- In addition to firm- and portfolio-level data, it is critical to collect and report sectorial and system-level data. While tracking individual companies' actions and performance metrics is important, we need to understand how to interpret and analyze this information at a sectoral and system level.
- Perceptions about the value of reporting and achieving actual improvements need to be changed. It is important that reporting is decision-useful—i.e. the reported information should directly support informed decision-making by investors, creditors, internal management, and other users—rather than simply being reported for its own sake.
 - At this moment, the narrative around sustainability reporting is politicized in Europe and the US. It highlights the burden of sustainability reporting and its supposedly negative effect on international competitiveness while downplaying the important benefits that the multistakeholder perspective brings to strategy and society at large.

- Concerns about cost are valid and need to be assessed. Yet, the costs in the long-term might not be as severe as anticipated given recent advances in AI.
- Merely reporting for the sake of reporting does not provide much value and potentially takes resources away from achieving actual improvements.
- A central question is how to effectively integrate diverse reporting standards. If the scope of (mandatory) reporting was excessively broad, the burden of reporting would likely outweigh the benefits. To minimize the burden and resistance from companies due to increased costs, participants recommend focusing on a few key externalities that are systemic and have the potential to bring down the system (e.g., climate, biodiversity, income inequality) and provide a menu (similar to what GRI does). Once this fundamental building block is established, additional elements can be incorporated more easily.
- The challenge lies in establishing an empirical link between reporting and decision-making. To shift the narrative and mindset, participants highlight the importance of making sustainability reporting fundamental to capital markets and company operations (which it does not do yet). Instead of framing the conversation merely around “impact”, shifting the framing to questions of “dependency” helps make this connection as we depend on resources on the planet and in society. As such, the idea of dependency is crucial to incentivize firms and investors to internalize externalities (and value intangibles) in their decision-making, especially in absence of mandatory disclosure requirements.
- Effective communication is key. As previously mentioned, framing the conversation around dependency might be fruitful in changing companies’ mindset about the value of reporting and achieving actual improvements. Allowing people to better understand the value of (negative and positive) externalities and intangibles.

IN PREPARATION OF THE “RE-WRITING THE SOURCE CODE OF CAPITALISM” CONVENING

The field of sustainability reporting, standardization, and the potential mandatory adoption of such standards is ever evolving and fertile ground of discussion across jurisdictions. To help inform the SIRI community and broader public—and in preparation of the “Re-Writing the Source Code of Capitalism” convening—SIRI hosted a series of Sustainable Finance Seminars to discuss different aspects of three core concepts fiduciary duties, system-level investing, and sustainability reporting. We have summarized key insights from these seminars and posted them on our dedicated [SIRI Pathways to Consensus](#) webpage. In particular, the following topics were discussed:

- The Evolution of Fiduciary Duty ([Summary](#))
- The Rollback of Corporate and Investor Transparency Rules in the US and Europe ([Summary](#))
- Sustainability Disclosure Standards for Financial Services ([Summary](#))
- Rewriting the Source Code of Capitalism: The Integration of Fiduciary Duty, System-level Investment, and Sustainability Disclosure ([Summary](#))
- The Omnibus Bill and the Future of Sustainability Disclosure in the European Union ([Summary](#))

Interconnectedness and Action Steps to Initiate Paradigm Shift and Drive Forward Progress

Based on the insights of the previous discussions, participants explored the interconnectedness between the three core theories and identified key leverage points and hurdles that need to be overcome to effectively enable a paradigm shift. They further identified possible pathways and action steps to achieve a paradigm shift and drive forward progress:

- The assumptions of the current elements of stale code need to be corrected;
- The key hurdles and leverage points to rewrite the source code;
- The key pathways and action steps needed – through research, education, dialogue and practice, policies – to overcome the identified obstacles

The participants generated several ideas on possible collaborative opportunities on research, education, and practice implementation. In case your organization is interested in driving forward and supporting any of those opportunities, please contact the SIRI team at siri@columbia.edu.
