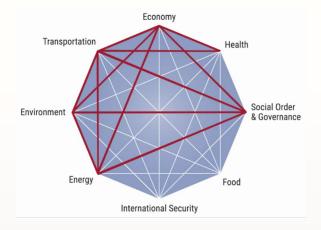
INTER-SYSTEMIC CASCADES

Pandemic Shock: Brief #8 v2.0 • February 23, 2021

Pension funds and the post-pandemic economy

A shift to bold climate leadership

Scott Janzwood



Summary

This Brief investigates the forces constraining Canada's pension funds from taking a bolder leadership role in the net-zero carbon energy transition. It also examines the forces pushing in the opposite direction—those that, if amplified and synchronized, could lead to changes in investment decisions commensurate with the scale and urgency of the climate crisis.

Emerging trends

- Despite the fact that the COVID-19 pandemic has hit fossil fuel companies hard, pension funds remain committed to the sector's success.
- Three forces obstruct pension funds from playing a greater leadership role on climate change: (1) the expectation that fossil fuel investments will bounce back, (2) misaligned incentive systems, and (3) inadequate risk assessment approaches.
- Three forces are accelerating pension fund leadership on climate change: (1) evolving perception of climate risk, (2) bearish fossil fuel market forecasts, and (3) momentum in favor of climate-related financial disclosure.
- Three ambiguous forces could tip to become either obstructions or accelerators: (1) the interpretation of pension funds' legal duties, (2) the funds' internalization of a moral imperative to lead, and (3) the beliefs of fund directors and managers.

Implications for action

- By emphasizing the "frame" of universal ownership and leveraging the moral authority of youth climate leaders, pension fund contributors, activists, and researchers can find creative ways to persuade the funds of their moral duty to lead on climate change.
- The improvement of climate-related financial disclosure practices can be accelerated through investigative research that discloses climate risk for the funds themselves.
- Activities that target multiple pension funds and encourage them to act in concert are more likely to succeed than campaigns targeted at individual funds.
- Empirical data on the belief systems of fund directors and managers should inform strategies for engaging with pension funds.







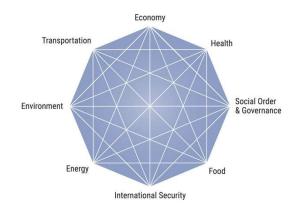
About the Cascade Institute

The Cascade Institute is a Canadian research center addressing the full range of humanity's converging environmental, economic, political, and technological crises. Using advanced methods for mapping and modeling complex global systems, Institute researchers identify *high-leverage intervention points* in cognitive, institutional, and technological systems that, if effectively exploited, could rapidly shift humanity's course towards fair and sustainable prosperity.

The Institute is located at Royal Roads University in British Columbia, a leader in training professionals to apply creative solutions to entrenched problems.

About the Inter-Systemic Cascades (ISC) Project

The Cascade Institute's Inter-Systemic Cascades Project maps causal routes through which the COVID-19 pandemic could sequentially destabilize associated national and global systems, causing cascades of change. This series of Briefs focuses on the pandemic's implications for the eight key systems highlighted around the adjacent octagon, and each Brief maps a possible causal route of destabilization among these systems. Cascades may be either "pernicious" (socially harmful) or "virtuous" (socially beneficial).



The analysis in this series starts from the assumption that societies are organized around cohesive sets of worldviews, institutions, and technologies (WITs), where:

- **Worldviews** are mental networks of concepts, beliefs, and values—often emotionally charged—that allow people to interpret things around them and plan their actions.
- **Institutions** are a community's rules governing social behaviour, including formal rules (constitutions, laws, and contracts), informal rules (customs and norms), and mechanisms of enforcement.
- Technologies are problem-solving tools that people create by harnessing phenomena of their physical and social environments.

Pandemic Shock: Brief #8

Pension funds and the post-pandemic economy: A shift to bold climate leadership

This ISC Brief is a condensed version of a Cascade Institute Technical Paper entitled, "Pension funds at a crossroads: Incremental greening or bold climate leadership?" (Janzwood 2021).

Background

A pandemic shock to the fossil fuel sector

Fossil fuel companies—and the financial markets that sustain them—have been hit hard by the COVID-19 pandemic and resulting economic downturn. Global demand for oil and gas plummeted in the early stages of the pandemic, with oil prices temporarily dipping into negative territory for the first time (Rapier 2020). Fueled by the ongoing price war between OPEC and Russia, the price collapse was the sector's third in twelve years (Barbosa et al. 2020). Meanwhile, the International Energy Agency (IEA) expects new investment in companies producing, refining, transporting, and building infrastructure for fossil fuels to decline by a fifth (nearly USD \$400 billion) in 2020 compared with 2019—the largest one-year decrease on record (IEA 2020b). This tailspin is occurring alongside steady decreases in the cost of renewables, which have had higher total returns relative to fossil fuels over the last decade (*Ibid*).

For some, these developments offer a tiny glimmer of hope for the prospects of transitioning our energy system towards renewables, meeting our emission reduction targets defined in the Paris Agreement, and limiting global heating to 1.5 degrees Celsius above pre-industrial temperatures.

Despite these trends, fossil fuels still make up about 84 percent of primary energy in the global energy mix (BP 2020)¹ and pension funds remain committed to the short- and long-term success of the fossil fuel sector. With all this momentum pointing towards the poor performance and escalating **climate risk** of fossil fuel investments, why do the holdings of most large pension funds reflect a future where fossil fuel companies (including those planning to significantly expand their operations) continue to produce handsome returns for investors into the 2030s and beyond?

Pension funds have the potential to be a **high-leverage intervention point** for accelerating the net-zero carbon energy transition. They are particularly important actors when it comes to the energy transition for three reasons. First, pension funds are enormously powerful. They are the largest class of institutional investor,

¹ While fossil fuels currently make up around 84 percent of primary energy, they represent only around 60 percent of useful "final energy" (Rathi 2020). Using primary energy data tends to slightly inflate the magnitude of the challenge of replacing fossil fuels with renewables.

accounting for USD \$33 trillion (OECD 2020)—or 45 percent—of all the USD \$74 trillion assets under management globally (Waite et al. 2019).² The incredible magnitude of pension funds' collective assets means that they can exert great influence over global markets and produce tangible social and environmental impacts on a scale second only to governments.³

Second, pension funds (particularly public pension funds) have a far clearer social mandate than other institutional investors like hedge funds and private equity funds. Pension funds have long-term investment horizons with a statutory duty to maximize returns in a way that does not compromise portfolio performance over the long-run. As a result, pension funds tend to be relatively risk-averse. In Canada, pension funds also have a statutory duty to manage their assets in the best interest of contributors and beneficiaries. Therefore, one might expect that Canadian pension funds would be particularly responsive to climate change—a problem that a majority of Canadians characterize as a "climate emergency" (Taylor 2019).

And third, pension funds belong to a special class of institutional investor known as **universal owners**, which also includes sovereign wealth funds and university endowments. The financial performance of universal owners is fundamentally intertwined with the performance of the economy at large (Quigley 2019; Hawley and Williams 2000). For example, pension funds require a consistent (and growing) stream of contributions to meet performance goals—but a significant dip in the economy or a prolonged spike in unemployment would compromise their ability to reliably produce positive returns.

Since the fate of pension funds is more or less tied to the fate of the global economy as a whole, they are unable to "diversify away" from systemic risks such as climate change that have significant impacts across all sectors (Quigley 2020). Moreover, the combination of their tremendous financial power and their twinned fate with the global economy has led scholars to argue that they *can* and *should* use that power to actively shape a more sustainable economy instead of merely following the timeline dictated by market signals (Williams 2020). The ability of funds to meet their obligation to pay out pensions to beneficiaries in the future is compromised by a failure to stay below the 1.5 degree limit defined by the Paris Agreement. The ability of funds to benefit from stable market growth in the long-term requires that we achieve this goal—which itself requires active participation from asset owners in rapidly shifting capital flows.

Focusing on Canadian pension funds, this paper investigates the forces constraining investors from going beyond incremental steps and taking a much bolder leadership role in the **net-zero carbon energy transition**. It also examines the forces pushing in the opposite direction—factors that, if amplified and synchronized, could lead to changes in investment decisions commensurate with the scale and urgency of the climate crisis. Lastly, it presents strategies to tip that balance that can be implemented by organizations, activists, and researchers working to accelerate pension fund leadership on climate change.

² Another commonly referenced source estimates that pension funds managed "approximately half" of the 2018 global investment market valued at USD \$85 trillion (Solheim 2018).

³ One reason for their considerable influence is that pension funds are closely connected to the world's largest banks who are the primary source of funding for both fossil fuel and renewable energy projects (Quigley et al. 2020).

Analysis: Assessing the prospects for bold climate leadership

This section analyzes the forces pulling on Canadian pension funds that will either lock them into their current pathway towards incremental greening or pull them onto a new trajectory towards bold climate leadership. While some of these factors are the direct result of the COVID-19 pandemic and its impact on energy markets in particular, most of them have been building for years. Figure 2 summarizes these constraining and accelerating forces using the metaphor of a tug-of-war. It also highlights three ambiguous forces could strengthen the factors on either side of the rope.

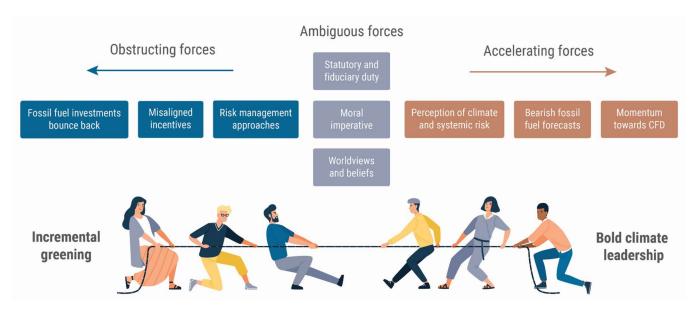


Figure 2: tug-of-war diagram illustrating key factors.

Forces obstructing bold climate leadership

- 1. Fossil fuel investments bounce back
- 2. Misaligned incentives
- 3. Inadequate risk assessment tools and approaches

Fossil fuel investments bounce back

Global energy demand is not expected to return to pre-pandemic levels until early-2023 (IEA 2020c) and Goldman Sachs suggested that global oil supply could follow an "L-shaped" path and may never fully recover to pre-pandemic levels (Sardana 2020). However, most Canadian pension funds still managed to meet their performance goals in 2020 despite a significant hit to their fossil fuel holdings. For example, CPPIB reported a 3.1 percent return for their last fiscal year despite a 23.4 percent hit to their Energy and Resources portfolio (Milstead 2020). Looking ahead, there is a distinct possibility that pension fund managers will be willing to wait

out another few years of volatile energy markets with the hope that their fossil fuel holdings will bounce back in the medium-to-long-term. Recent comments made by pension funds appear to reflect this course of action. For example, the Global Head of Public Affairs and Communications at CPPIB, Michael Leduc, recently reaffirmed the fund's commitment to investing in—and working with—fossil fuel companies who they view as powerful "agents of change" and "instrumental players" in addressing the challenge of climate change (Kolivakis 2020).

Misaligned incentives

A 2017 report released by the OECD summarizes the main obstacles facing institutional investors like pension funds to incorporate environmental, social, and governance (ESG) factors into their investment strategies and rapidly decarbonize their holdings. Among these obstacles, misaligned incentive systems are perhaps the most difficult to address. Institutional investors tend to evaluate the performance of executives and directors over three-to-five-year time horizons with manager remuneration incentives often tied to annual performance metrics (OECD 2017). These relatively short timeframes may incentivize fund managers to make decisions that prioritize short-term performance at the expense of de-risking their portfolio over a larger time horizon. Meanwhile, support for adjusting remuneration incentives remains low. A 2019 survey of signatories to the UN Principles for Responsible Investment found that only 32 percent of institutional investors describe the inclusion of ESG metrics in short-term incentive plans as "very important" (Morrow Sadali 2019).

Compensation schemes are often linked to the performance of other funds, which makes it difficult for managers to pursue less familiar investments not found in the portfolios of their competitors, such as those reflecting ESG factors (Himick 2011). Investors that are the first to identify and act on a climate risk (either by divesting from a risky asset or investing in a greener asset) will underperform the market until other investors follow suit (OECD 2017). This "first-mover disadvantage" is fundamentally at odds with leadership because it rarely pays for pension fund managers to stick their necks out. From this perspective, it is better for everyone to lose than for a single fund or fund manager to risk losing on their own.

Inadequate risk assessment tools and approaches

One common argument from investors is that decreasing fossil fuel holdings or moving too quickly into renewables hurts their ability to sufficiently diversify their portfolios and thus would actually serve to increase risk exposure, not decrease it. From this perspective, market prices ignore or underestimate much of the risk associated with fossil fuel assets and other assets misaligned with the energy transition—and therefore, it is up to investors to price that risk into their models. Meanwhile, conventional risk assessment tools used by pension funds also struggle to integrate measurements of climate risk and other environmental factors. Standard value at risk (VaR) models have trouble with emerging or rapidly evolving sectors because they tend to extrapolate future performance using robust historical data—which does not exist for renewables or emerging technologies. Physical and regulatory risk associated with climate change is clouded by deep uncertainty and is thus difficult to precisely quantify and integrate into VaR models.

However, pension funds are trying to counteract the biases and limitations of conventional risk assessment tools. New tools advocated by the Task Force on Climate-related Financial Disclosures (TCFD) (TCFD 2020), such

as carbon footprinting and scenario analyses are increasingly being developed and deployed to assess climate risk. However, the mainstream implementation of these tools is limited by the lack of standardized data and risk metrics and the "non-monetary" or qualitative nature of climate risk (OECD 2017). Consequently, climate risk is typically integrated into financial risk assessments as a qualitative "score" that is paired with a quantitative assessment of financial risk. The separation of these assessments can have the effect of relegating the assessment of climate risk to a mere "check-box" exercise.

Forces for accelerating bold climate leadership

- 1. Evolving perception of climate and systemic risk
- 2. Bearish fossil fuel market forecasts
- 3. Momentum towards climate-related financial disclosure

Evolving perception of climate and systemic risk

The most powerful force pushing pension funds towards bold climate leadership is the increasingly urgent and material reality of climate change itself. While the decrease in global economic activity during the pandemic has led to a notable decrease in global emissions (Le Quéré et al. 2020), scientists believe that this temporary dip⁴ is unlikely to buy us any more time to spend the remaining carbon budget (Forster et al. 2020; Weber et al. 2020).

Since the Paris Agreement took effect in 2016, several developments have raised the already daunting stakes and urgency of the climate crisis. With the publication of a Special Report in 2018, the Intergovernmental Panel on Climate Change described how the impacts of limiting global heating to 2 degrees would be *significantly worse* than limiting global heating to 1.5 degrees (IPCC 2018). Research on climate tipping elements—like the ice-albedo feedback activated by the collapse of the Western Antarctic and Greenland ice sheets—has become much more sophisticated over the last four years. Scientists now warn that such tipping events may be triggered at an increase in global temperature of just 2 degrees (Steffen et al. 2018). Meanwhile, optimistic projections of global heating with existing emissions reduction commitments (that most countries seem unlikely to meet) have us on pace to exceed 3 degrees above pre-industrial temperatures by 2100 (Hausfather and Peters 2020).

Meanwhile, the opportunity window for an orderly, "managed decline" of oil and gas production may have already closed (Strauch et al. 2020), producing transition risks from an even less predictable regulatory environment. With US President-elect Joe Biden's pledge to reenter the Paris Agreement and enact policies to achieve net-zero emissions by 2050 (Regan 2020), the global climate change governance regime could change drastically over the next few years. Investors like pension funds face deep uncertainty around the regulations that will be implemented in major economies like the United States, and thus face significant risk around stranded assets and abrupt changes in the value of key investments.

⁴ This statement makes a rather large assumption that the global economy will return to pre-COVID levels of activity and energy consumption in the next few years. For a discussion on recent claims that we may be headed for a prolonged "Greater Depression," see Lawrence and Homer-Dixon (2020).

Some might view the fact that pension funds were able to weather the COVID-19 crisis relatively unscathed—despite major losses in fossil fuels—as proof that broad portfolio diversification is a sufficient strategy for managing climate risk. However, climate change impacts and regulatory shocks will soon have profound impacts on every sector of the economy. The only effective risk management strategy is to rapidly move away from the riskiest assets and towards investments like renewables whose success is a *necessary condition* for reducing systemic climate risk across the entire economy.

Bearish fossil fuel market forecasts

Major oil companies predict a ramp-down in the global production of oil with big write-offs of assets deemed profitable only a year or two ago. At the very least, investors will need to increasingly scrutinize the operations of fossil fuel companies and abandon the riskiest (and most carbon-intensive) classes of oil and gas. The pandemic has also negatively impacted the global supply of renewables as a result of construction delays and the decrease in global energy demand. However, the IEA expects the sector to rebound strongly in 2021 (IEA 2020a). It remains a possibility that, as long as the fossil fuel sector continues to trend downwards, the markets will make pension funds' decision to shift away relatively easy. However, there is certainly no guarantee that the markets will send sufficiently strong signals to pension funds to give up on an increasingly hopeless sector.

Momentum towards climate-related financial disclosure

Despite this paper's criticism about the pace at which Canadian pension funds are implementing the TCFD's recommendations around disclosure and governance, we know that these conversations—around ESG, climate risk, and climate-related financial disclosure—are finally happening at the water coolers and Bloomberg terminals of most of these funds. Over the last few years, the conversation has shifted from encouraging pension funds to simply acknowledge the concept of climate risk to taking actions to measure and report it. That is incremental—albeit promising—progress. However, bold climate leadership requires that pension funds go a step beyond measurement and reporting, and reduce climate risk on a timeline that squares with a 1.5 degree target.

Ambiguous forces

- 1. Interpretation of statutory and fiduciary duty
- 2. A moral imperative
- 3. Worldviews and beliefs of fund directors and managers

Canadian pension fund managers are bound by statutory and fiduciary duties that protect beneficiaries.⁵ Fund managers are statutorily obliged to maximize returns and minimize risk, while managing their assets in a way that is consistent with the best interests of current and future beneficiaries. They must also meet their fiduciary duties of prudence (to exercise the care, skill, diligence and judgment that a prudent investor would exercise in making investments) and loyalty (to act honestly, avoid conflicts of interest, and not behave criminally). However, broader or narrower interpretations of these duties result in very different implications for pension fund managers' legal responsibilities towards beneficiaries with respect to managing climate risk.

Some legal scholars have advocated a broader interpretation of the legal duties of pension fund managers than that conventionally adopted within the industry. They argue that a "reasonably prudent person" would be aware of the broad consensus that climate change is a real and imminent crisis and should be making investments that align with that reality (e.g., Hansell LLP 2020). Further, they argue that it is clearly in the "best interest" of future beneficiaries to stop propping up a version of the economy that will reduce the prospects for reliable returns in the long run.

However, the narrower interpretation asks far less of the investor and focuses solely on familiar and quantifiable financial risks and benefits. Climate risk—whether physical or regulatory—tends to be difficult to quantify and is shrouded in the type of deep (or Knightian) uncertainty that the finance industry has always struggled to manage. Therefore, attempts to integrate unruly climate risk into financial risk assessments—while probably a good idea—would fall outside of the scope of prudent investment. Investors are simply expected to adopt standard risk management approaches such as diversification, which can result in herding behavior and the underestimation of systemic risk (Dawson 2015; Rajan 2012).

Meanwhile, some investors with a narrow view of their fiduciary duty argue that if a "reasonably prudent person" had reason to believe that fossil fuel investments would rebound in 2021, a failure to capitalize on it and maximize short-term returns would constitute a breach of fiduciary duty (e.g., Kolivakis 2020). This claim is rather tenuous since courts and regulators have ruled that investors can look beyond financial criteria to inform their investment decisions (OECD 2017). Further, there is the possibility that by maximizing short-term returns (by staying locked into fossil fuels, for example), the fund could dramatically increase its exposure to mid-to-long-term climate risk and thus fail to meet its duty to minimize risk (and possibly constrain its ability to maximize returns in the future). However, to date, the courts have offered little clarification on such tradeoffs between short- and long-term risks and returns and many investors continue to see legal duties as an obstacle to ESG integration (PRI 2015).

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⁵ Statutory duties are within the realm of public law (emerging from the legislature) and fiduciary duties are within the realm of civil law (emerging from equitable principles).

⁶ The term Knightian uncertainty refers to situations where one lacks confidence that all possible outcomes have been identified and lacks confidence in the relative likelihood of those outcomes. For investors, this means that they can't be completely confident that they understand all the possible scenarios around how the impacts of climate change will unfold, how the regulatory environment will evolve, and how investments will perform in this dynamic context. Therefore, they are unable to confidently assign probability estimates to various scenarios. Knightian uncertainty is particularly pernicious with unprecedented and systemic risks.

It remains unclear whether attempts to sue slow-moving pension funds for breach of fiduciary duty—even those that appear hostile towards calls to reconcile their investments with the climate crisis—will be successful. However, even if Canadian pension funds are found to have breached their fiduciary duty—a process that would likely play out over several years in the courts—it is unlikely that such legal action would lead to bold climate leadership on its own. While there may not be a compelling case that Canadian pension funds *must* rapidly improve their management of climate risk, there may be a more compelling case that they *should*.

A moral imperative

A common refrain from leaders in the financial sector is that transforming the economy to address climate change—while perhaps desirable—is not their responsibility. From this "market player" perspective, governments are supposed to shape the expectations, incentives, and behavior of corporations and financial actors, which in turn shape markets and investment patterns. Apolitical investors simply play the markets to maximize returns for their beneficiaries. Importantly, investors at Canada's public pension funds emphasize the arms-length relationship between government and pension funds as a crucial buffer against political influence over investment decisions. From this perspective, government initiatives—like Canada's commitment to achieving net-zero emissions by 2050—should only influence investment decisions insofar as concrete policies like a carbon tax or the removal of subsidies to fossil fuel companies have an impact on markets.

One problem with this perspective is that it ignores the overlap between government initiatives and the desires of the present and future beneficiaries to which pension funds are accountable. In theory, governments are supposed to articulate and execute the collective will of the electorate. There is, without a doubt, a significant overlap between the goals of Canadians expressed through the actions of their democratic institutions and the goals of public pension funds' beneficiaries. While this windbreak between the governments and pension funds is there for a reason, foisting responsibility for addressing climate change entirely on the government is unlikely to satisfy many Canadian pension beneficiaries.

More fundamentally, if pension funds take their statutory duty to maximize returns and minimize risk for *future* beneficiaries seriously—that is, their investment strategies reflect the **principle of intergenerational equity**—then it seems rather obvious that they should be doing everything they can to protect the capacity of the fund to produce positive returns decades from now. Mainstream models of the economic impact of climate change in the latter half of the twenty-first century project that we are currently on a path towards a significant contraction of the global economy. The current approach that combines (1) a blanket policy of engaging with fossil fuel companies, (2) tentatively pursuing green investments, (3) gradually adopting TCFD recommendations, and (4) making vague statements about decreasing exposure to climate risk—all while waiting for governments to trigger stronger market signals—is completely inconsistent with intergenerational equity.

One counterargument from investors might be that maximizing short-term returns—even if that involves a heavy dose of fossil fuels and other carbon-intensive investments—ultimately serves to increase the size of the

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⁷ For example, a model by Burke et al. (2015) defines the probability of a "more than 20 percent" contraction in global GDP at 51 percent, a "more than 10 percent" contraction at 63 percent, and a "more than 0 percent" contraction at 71 percent.

pie and improve the pension fund's investment position in the future. In other words, short-termism grows the pie, which can help feed more mouths down the line, thus serving to protect the principle of intergenerational equity. Paired with the argument that climate change is the government's problem to solve, this idea might strike some pension fund managers as a compelling argument for keeping their heads down and continuing to do their best to carry out the already daunting task of reliably out-performing the market without adding additional hurdles.

However, baking the pie using rotten, risky ingredients is, ultimately, a recipe for disaster. More importantly, it will become increasingly difficult to bake the pie in an oven badly in need of repair. A climate-imperiled global economy will be a hostile investment environment for even the savviest of institutional investors. While universal owners like pension funds are extremely vulnerable to macroeconomic forces and systemic risk, they also possess the resources and financial power to shape the global economy and steer it away from the worst outcomes. If the world's pension funds decide to align their USD \$33 trillion of collective holdings with the Paris Agreement target, our probability of staying within the remaining carbon budget would jump appreciably. Canadian pension funds possess the tools to repair the oven—and perhaps that comes with a parallel duty to use them.

Worldviews and beliefs of fund directors and managers

Lastly, it is worth considering the current state of the worldviews and beliefs of managers and directors of Canadian pension funds. There is plenty of evidence that the individuals working for pension funds care about climate change and believe it should have some influence on their investment strategy. For example, Mark Machin, the President and CEO of the CPPIB recently told the House of Commons Standing Committee on Finance that: "Climate change is happening. We believe in the energy transition. The energy transition will be under way towards a low-carbon economy over time" (FINA 2020). However, he also clarified that the CPPIB investment strategy around fossil fuels is based off of projections of how the energy transition is proceeding—projections that he admits are "probably not consistent with a great climate outcome." This sort of resigned acceptance that that the market is not going to move fast enough to achieve our emissions reduction goals shows that many pension funds still see themselves as incrementalist market players—not bold climate leaders.

Mechanisms for accelerating pension fund leadership on climate change

This section highlights five key interactions between the forces pulling Canada's pension funds towards incremental greening or bold climate leadership. In particular, it shows how ambiguous forces may be "tipped" to disrupt the self-reinforcing feedbacks currently locking pension funds to the status quo.

1. A self-reinforcing relationship between incentives, standard risk management approaches, and a narrow interpretation of legal duties ties pension funds to the status quo.

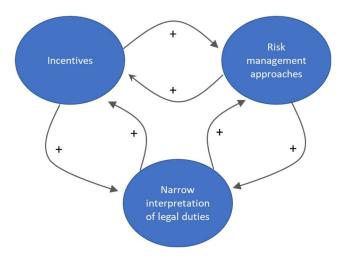


Figure 3

Incentive systems and standard risk management approaches interact in a positive or self-reinforcing feedback system, where incentives to maximize short-term returns, outperform similar funds, and not "rock the boat" serve to further entrench the use of conventional risk management approaches (like sector-agnostic portfolio diversification) and tools (like VaR models). Collectively, these forces encourage a narrow interpretation of fiduciary duty that prioritizes maximizing short-term returns and minimizing the most easily quantified financial risks. Since these duties can be met without changing incentive systems and approaches to managing risk, a narrow interpretation of legal duties strengthens resistance within the organization to adopting new practices. The interactions between these three forces trap pension funds into a market "player" role that allows them to ignore their vulnerability to systemic risk—and their responsibility to address it as universal owners.

Takeaway #1: Effective strategies to disrupt this self-reinforcing relationship must target at least two (or ideally, all three) of these forces simultaneously.

2. Emphasizing the moral imperative of pension funds as universal owners leads to a broader interpretation of legal duties.

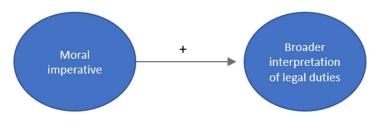


Figure 4

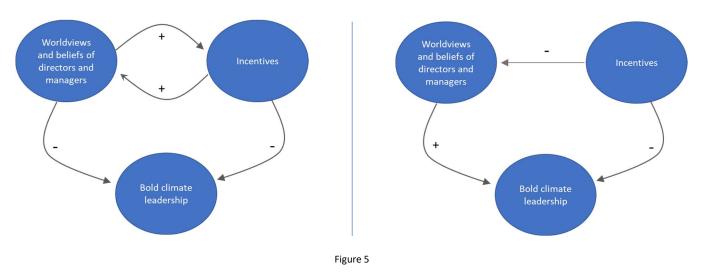
While taking bold actions to protect the retirement savings of future beneficiaries from climate risk may not be a clearly defined *legal* obligation, pension funds may soon realize that it is a *moral* one. By realizing the unique vulnerabilities and responsibilities that come with universal ownership, pension funds must reconcile tradeoffs between short-term return maximization and long-term risk minimization. A true commitment to

intergenerational equity means that pension funds must play a more active role in *shaping* the investing conditions that they will be operating in for decades to come.

Broadening the interpretation of legal duties disrupts the positive feedback in Figure 3 by increasing the demand for more sophisticated risk management approaches that can better account for long-term, discontinuous, and difficult-to-quantify risks. To a lesser extent, this broader interpretation could also soften the organization's commitment to relative remuneration practices since it will become increasingly difficult to meet the broader duties of a universal owner while also tying financial incentives to competitors that interpret their duties more narrowly.

Takeaway #2: Pension fund contributors, activists, and researchers must find creative ways to persuade pension fund directors and managers of their moral duty to play a leadership role as universal owners.

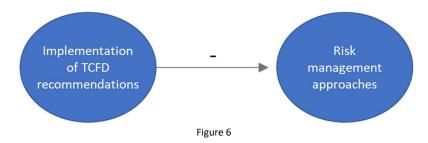
3. Changing hearts and minds or removing obstacles?



It remains an open empirical question whether the dominant beliefs of directors and managers within Canada's pension funds are generally aligned with their funds' incremental approach to greening their portfolios or whether we underestimate the level of support for bolder action. If the first hypothesis is correct, then proponents of ambitious action on climate change face a rather steep hill to climb in order to persuade fund directors and managers to take bolder steps. Such a scenario could also indicate that the level of climate risk literacy within these organizations is surprisingly low. However, if there is already a base level of support that is being stifled by misaligned incentives and practices, pension fund contributors and activists must tailor their messaging to a more receptive audience.

Takeaway #3: A clearer picture of the current worldviews and beliefs of pension fund directors and managers would strengthen strategies for advocating for pension fund leadership on climate change.

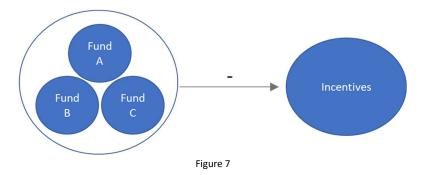
4. The implementation of TCFD recommendations undermines the standard risk management approaches used by pension funds.



By increasing pension funds' (and their contributors') awareness of their exposure to climate risk, the accelerated adoption of TCFD recommendations would also expose the inadequacy of standard risk management approaches and could hasten the adoption of new tools for measuring and managing it, such as those advocated by the TCFD itself. The sooner that TCFD recommendations are adopted, the sooner both beneficiaries and pension funds themselves will understand the extent of their exposure to climate risk, which will further expose the inadequacy of current practices for managing it.

Takeaway #4: Accelerate the implementation of TCFD recommendations.

5. Synchronizing the activities of pension funds can eliminate incentives to maintain the status quo.



Pension funds are held hostage by the "first mover disadvantage." Leadership is rarely rewarded by the market. Pension funds would be much less tentative to adjust their current investment strategies if there was a synchronized, simultaneous movement of many funds away from risky fossil fuel assets and towards climate change solutions. Fortunately, this movement already has a vanguard. European pension funds like Fjärde AP-Fonden (AP4) in Sweden and Stichting Pensioenfonds (ABP) in the Netherlands are already leading the global shift in capital towards a net-zero carbon economy.

Takeaway #5: Activities that target multiple pension funds and encourage them to act in concert are more likely to succeed than campaigns targeted at individual funds.

Implications for action

A growing number of organizations and researchers in Canada are working with Canadian pension funds and their beneficiaries to more effectively respond to the climate crisis. To date, their recommendations have largely focused on how beneficiaries can better hold pension funds accountable for responsibly and transparently managing their retirement savings, how the Canadian government can clarify the duties and expectations of pension funds, and how the pension funds themselves can rise to the challenge before them. Box 2 and Box 3 summarize the recommendations of two groups central to this dialogue: Shift (2019) and the Corporate Mapping Project (Rowe et al. 2019).

Box 2: Shift's recommendations for contributors and beneficiaries to effectively engage with pension funds:

- 1. Emphasize the disclosure of climate risk
- Understand the governance structure and opportunity structure of the particular fund you are engaging with
- 3. Engage constructively by assuming the good intentions of fund directors and managers
- 4. Build support among other contributors and beneficiaries
- 5. Communicate with pension funds regularly
- 6. Communications should emphasize:
 - a. Disclosure of climate risk
 - b. Cutting high-carbon investments from portfolios
 - c. Shifting investments to climate change solutions

Box 3: The Corporate Mapping Project's recommendations for pension funds and governments

Pension funds:

- 1. Carry out portfolio-wide climate risk analysis
- Freeze new fossil fuel investment, divest from the highest-risk fossil fuel assets already in the portfolio and reinvest capital into renewable energy and other climate solutions
- 3. Advocate for stronger climate policy to decrease regulatory uncertainty and transition risk

Governments:

- Require full disclosure of fossil fuel holdings and climate risk
- Clarify the statutory and fiduciary duties of pension funds to protect the long-term interests of future beneficiariesShifting investments to climate change solutions

The strategies that emerge from the mechanisms identified in the previous section apply more broadly to the growing movement of organizations, activists, and researchers working to accelerate pension fund leadership on climate change. These strategies all serve to disrupt the self-reinforcing feedback between incentives, risk management approaches, and the narrow interpretation of legal duties locking pension funds to the status quo (mechanism #1 identified in the previous section). They also complement and strengthen the recommendations proposed by other groups since effective strategies to disrupt this self-reinforcing relationship must target this feedback loop from multiple angles simultaneously.

Pension fund contributors, activists, and researchers must find creative ways to persuade pension fund directors and managers of their moral duty to play a leadership role as universal owners.

- Emphasize universal ownership. Attempts to anchor lobbying efforts to a divestment "framing" have been met with resistance from Canadian pension funds. While freezing new investment in risky fossil fuel assets and removing the riskiest assets from their portfolios are part and parcel with universal ownership, the universal ownership framing may be met with less resistance than a divestment framing. Universal ownership emphasizes the responsibilities and opportunities facing pension funds—rather than emphasizing unethical investments that need to be eliminated. When coupled with increasingly stark projections of what the world will look like without bold leadership from the financial sector, the universal ownership framing could lead to a more energized and productive dialogue that won't be met with knee-jerk resistance from pension funds.
- Engage youth climate leaders in efforts to pressure pension funds to protect intergenerational equity. So far, current contributors have led efforts to engage Canadian pension funds on climate change. However, these efforts could be significantly amplified by future (or new) contributors. Canadian youth possess a unique level of moral authority because of the asymmetry between their limited political and financial power on the one hand and the extent to which they will disproportionately bear the burden of climate change on the other. They are similarly disenfranchised by pension funds that are making investment decisions today that have big implications for both the state of the global economy that today's youth will inherit, as well as their ability to retire comfortably decades from now.

The core challenge will be finding creative ways to energize youth around such a complex, abstract, and—frankly—rather unexciting lever for accelerating the net-zero carbon energy transition. However, the importance of pension fund leadership in the fight against climate change is undeniable and youth climate leaders are eager to direct their energy towards intervention points with the highest leverage.

A clearer picture of the current worldviews and beliefs of pension fund directors and managers would strengthen strategies for advocating for pension fund leadership on climate change.

• Clarify the normative landscape within pension funds. Efforts to engage with Canada's pension funds would be boosted by a clearer picture of the current worldviews and beliefs of directors and managers. Many of these individuals are concerned parents, community leaders, and passionate advocates for change. These individuals are also tasked with the enormous challenge of protecting and growing the retirement savings of Canadians for decades to come—a responsibility that they do not take lightly. However, we do not know the extent to which they are informed about the urgency of the climate crisis and the particular vulnerability of pension funds to systemic risk (and their unique capacity to address it). Nor do we know the extent to which pension fund directors and managers support shifting the incentive systems, risk management approaches, and disclosure practices of their organizations. Empirical research in these areas could provide pension fund contributors and activists with new and more effective strategies for engaging with pension funds.

Accelerate the implementation of TCFD recommendations.

- **Disclose pension funds' climate risk for them**. While pension funds have been reluctant to increase transparency around their exposure to climate risk, particularly in the asset classes that matter most, researchers can begin piecing this data together themselves. By revealing the extent of these funds' exposure to climate risk for them, researchers can motivate pension funds to seize control of this process themselves. Unfortunately, the disclosure of many key sources of climate risk—such as bank bonds laden with high-carbon debt and funds managed by other investors—require cooperation between multiple financial actors and must be led by pension funds themselves.
- "Trade" engagement for improved climate risk reporting. Pension funds continue to advocate engagement as their primary strategy for managing climate risk despite a lack of compelling evidence supporting its effectiveness. If pension funds are to be given the benefit of the doubt that their engagement activities will result in tangible and rapid decreases in both the climate risk and carbon footprint of their fossil fuel investments, they must provide contributors with a way to verify the effectiveness of these activities. The accelerated implementation of the TCFD's disclosure recommendations should be framed as a necessary condition for contributors' continued acceptance of the engagement strategy. The onus is now on pension funds to prove to their contributors that engagement is consistent with bold climate leadership.

Activities that target multiple pension funds and encourage them to act in concert are more likely to succeed than campaigns targeted at individual funds.

• Bring multiple pension funds to the same table at the same time. In order to overcome many of the misaligned incentives that are tying Canadian pension funds to the status quo, they need to move in tandem with other large investors both in Canada and around the world. Most of the current engagement efforts with pension funds focus on improving the dialogue between contributors and the specific pension funds that are accountable to them. However, new strategies need to be developed that bring these isolated conversations together. One example is the UN's Net-Zero Asset Owner Alliance. The challenge is now to expand these conversations beyond the handful of actors that are already global leaders in managing climate risk. Such efforts to synchronize a largescale shift away from fossil fuels could also be strengthened by a common moral framing around universal ownership.

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About the author

Scott Janzwood is the Deputy Director of Research and Operations at the Cascade Institute. His research focuses on how scientists and policymakers collaborate to address global catastrophic risks such as climate change, pandemics, and other emerging threats.

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