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From Bushfires to Misfires: New Developments in Climate Litigation Over Financial Risk

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1. SETTING THE SCENE

1.1 Introduction

There exists a certain discretion on which events end up in history books. And yet, among the events dawning on our global society, year 2020 will be impressed in the mind of present and future generations for the pandemic that the world is experiencing at dramatic rates. Covid-19 is a so-called black swan, an unexpected event, wide-ranging or extreme, that can be explained only *after* it has occurred.[1] But pandemics are not the sole candidates to history books, or to the heuristic category of black swans. Climate change has long proved to generate black swans, some of the most challenging ones for law and society to tackle.[2]

Along these lines, the scorching Australian summer of 2019–2020, known as Australia's Black Summer, will not only be remembered for the devastation wrought by bushfires and its climate change-induced exacerbation. In parallel, a landmark climate change lawsuit swirled its way up to Australia's Federal Court. Originally filed in 2018, *McVeigh v Retail Employees Superannuation Trust* tests for the first time the climate-related financial risk and fiduciary duties of retail superfunds, namely pension funds that accept members from all occupations and industries.[3] Previously, beneficiaries had attempted to bring their pension funds to court over

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[1] N.N. Taleb, *The Black Swan: The Impact of the Highly Improbable* (Allen Lane 2007).
[2] Ibid, p. 315. P. Bolton and others, *The Green Swan Central Banking and Financial Stability in the Age of Climate Change* (Bank for International Settlements 2020).
[3] *Mark McVeigh v. Retail Employees Superannuation Pty Ltd*, NSD1333/2018 (Federal Court of Australia 21 Sept. 2018, amended complaint). On the exacerbation of bushfires in Australia due to climate change, see G. J. van Oldenborgh and others, 'Attribution of the Australian bushfire risk to anthropogenic climate change' (2020) Nat Hazards Earth Syst Sci Discuss 1 (accepted for review).

failures to disclose and manage climate-related financial risk. However, these suits were brought vis-à-vis corporate superfunds, namely pension funds that employers arrange for their employees. Further, these cases occurred mainly in the United States, where such claims were often based on alleged conflicts of interests and had to fulfill high pleading standards.[4] Due to these factors, climate change litigation against pension funds has not led to a wider understanding of pension fund duties in times of climate change.[5]

McVeigh v Retail Employees Superannuation Trust reveals a certain dissatisfaction of beneficiaries toward climate-related risk management by their pension funds beyond the limited issue of conflict of interests. As institutional investors, pension funds are now faced with more general questions on how they allow for beneficiaries' informed consent on plan investments. Moreover, they are asked to account for whether and how their investment managers make informed decisions regarding climate-related financial risk (below, 2). Scheduled to be tried in Sydney in 2020, the case is far from settled. But its emergence is not coincidental and offers a space for deliberation on normative approaches to pension fund climate-related financial risk. So far, voluntariness, rather than normativity, has shaped approaches in the field, notably through the work undertaken by the Task-Force on Climate Related Financial Risk (TCFD, below, 3.1). Though highly meritorious, the TCFD instruments do not rule out regulation by either governmental institutions or courts of law.

This paper considers normative approaches to pension fund climate-related financial risk. First, it examines *McVeigh*, the first lawsuit filed against a retail public fund, which invokes TCFD-based standards (below, 2). Second, it surveys TCFD instruments and the valley of opportunity that they open up for judicial and public regulatory determinations, also in light of

[4] See also *Fentress v Exxon Mobil Corp*, 4:16-cv-03484 (S.D. Tex. February 4, 2019); *Lynn v Peabody Energy Corp*, 250 F.Supp.3d 372 (E.D.Mo. 2017); and *Roe v Arch Coal Inc*, 4:15-cv-00910 (E.D. Mo. January 15, 2016). Cf *Jander v. Retirement Plans Comm. of IBM*, 910 F.3d 620 (2d Cir. 2018). See also J. Faucher and D. Rudolph, 'Second Circuit Breathes New Life into Company Stock Litigation' (2019) 26 Journal of Pension Benefits 22.
[5] See Faucher and Rudolph (op. cit.), pp. 22–23.

literature on black swans and socio-legal studies (below, 3–4). Finally, the paper ponders how the theory of responsive regulation offers a valuable frame through which courts may address present and future regulation to tackle pension fund climate-related financial risk (below, 5).

1.2 Methodology

This paper centers on *McVeigh*, a global first in climate change litigation against pension funds. *McVeigh* is only one of the notable cases that have recently veered toward the articulation of climate financial risk and responsibility in Australia.[6] Beyond its interesting posture, this lawsuit helps articulate possible normative approaches to pension fund climate-related financial risk through the prism of responsive regulation. It would not be the first time that scholarship engages with climate change litigation before a final court's adjudication of the substantive claim. The merit of such exercise can be found in a core function of legal doctrine, situating contingent cases into existing case law and regulation and tying such cases to projections of litigation and regulation into the future. Hence, analyzing the implications of *McVeigh* does not seem premature.

The discussion discounts several assumptions and limitations. Building on *McVeigh*, the paper focuses on judicial determinations and the complementary role of regulation by public authorities, leaving other normative approaches for further research. Existing approaches to climate-related financial risk are epitomized by the TCFD work, which *McVeigh* invoked as the relevant standard for the management of climate risk in pension funds (below, 2 and 3.1). It should be recognized, however, that regulation by governmental institutions—different from and often inspired by the TCFD initiative—has emerged significantly, if sparsely and

[6] See a helpful review in J. Peel and R. Markey-Towler, '"A Wake-up Call": Why this Student is Suing the Government over the Financial Risks of Climate Change' (The Conversation, 27 Jul. 2020).

unevenly.[7] Within this context, the TCFD is molding the worldwide discourse on climate-related financial risk and can offer valuable material for judicial determinations in relevant lawsuits and prospective regulation. In Australia, for instance, the Australian Prudential Regulation Authority (APRA) and the Reserve Bank have endorsed the TCFD instruments through non-binding declarations.[8] Similarly, after the filing of the case, climate change has been deemed a financial risk that directors of listed entities *may* consider to disclose in line with the TCFD.[9] Similarly, the court order in *McVeigh* has already underlined that the case concerns the duties of superannuation trustees in relation to climate change and that it may prompt REST to disgorge more material about how it fulfilled its duties than it has done until now.[10]

In this sense, I do not inquire how I believe courts should decide *McVeigh* and similar cases. In the pluralism of the legal professions, professional sensibilities can widely vary[11] and my effort here is to articulate the implications of invoking the TCFD in a court of law, which is first in its kind in *McVeigh*, rather than the *dispositif* of the ruling in this and similar cases.

Per se, the TCFD instruments fall within (informal) transnational law.[12] Contrary to traditional international law, informal transnational law is generated through processes that do away with certain formalities, and can point to either soft law or global administrative law. Because it lacks an administrative apparatus, the TCFD instruments seem characterizable as soft law: a set of global instruments devoid of binding effects either domestically or

[7] UNEP-FI/PRI, *Fiduciary Duty in the 21st Century: Final Report* (2019), p. 14, generally on instruments promoting pension fund sustainable investment.
[8] G. Debelle, 'Climate Change and the Economy' (Speech, Centre for Policy Development, Sydney, 12 Mar. 2019).
[9] APRA, RG 247.66 (Aug. 2019).
[10] *McVeigh v Retail Employees Superannuation Pty Ltd* [2019] FCA 14 at 8 and 11.
[11] D. Kennedy, 'One, Two, Three, Many Legal Orders: Legal Pluralism and the Cosmopolitan Dream' (2007) 31 New York University Review of Law & Social Change 641, pp. 641 and 648–649.
[12] Cf one of the most influential manuals of international environmental law, P. Sands and others, *Principles of International Environmental Law* (4th edn, CUP 2018), p. 717, refers to the TCFD regulatory instruments 'as an important forum for the standardisation of environmental auditing and accounting standards in key areas such as carbon risk disclosure.'

internationally.[13] As a piece of soft law, TCFD instruments are not grounded in any specific legal system or culture: they thus appear to belong to transnational law, meaning "all law which regulates actions or events that transcend national frontiers."[14] As global law, transnational law is meant to move beyond the state, toward an enhanced understanding of multiple systems of law, as well as of public and private governance in action.[15] Importantly, transnational law "breaks" traditional "frames,"[16] for instance, when it requires that domestic courts take a stance vis-à-vis normative instruments that have not originated in state-centered legal systems, but are rather examples of law without a state (e.g., *lex mercatoria*),[17] such as for TCFD instruments.

Albeit articulating standards for reporting climate-related financial risk, the TCFD stops short of offering a general definition of risk. Financial law portrays several definitions of risk, and the concept of risk is itself dynamic.[18] Notwithstanding, it seems appropriate to here recall one of the most influential definitions of risks as measureable uncertainties, whereas uncertainties constitute unmeasurable uncertainties.[19] The context of climate change, where many uncertainties are unmeasurable, allows for identifying in the term "risk," as used by the TCFD, both risks and uncertainties.

The legal methodology herein employed takes the legally disruptive character of climate change as a given, and focuses on the lack of adaptability of law as one of the main sources of

[13] Referring to international soft law instruments, see M. Kanetake and A. Nollkaemper, 'The Application of Informal International Instruments Before Domestic Courts' (2014) 46 The George Washington Int'l L Rev 765, p. 771. On soft law as 'a set of written, advisory prescriptions,' see A.L. Newman and E. Posner, *Voluntary Disruptions: International Soft Law, Finance, and Power* (OUP 2018), p. 32. A thorough definition of soft law still eludes scholarship, ibid, pp. 2 and 15.
[14] P.C. Jessup, *Transnational law* (Yale University Press 1956), p. 2.
[15] See, e.g., V. Heyvaert and T. Etty, 'Introducing Transnational Environmental Law' (2012) 1 TEL 1, pp. 4–5.
[16] G. Teubner, 'Breaking Frames: Economic Globalization and the Emergence of Lex Mercatoria' (2002) 5 European Journal of Social Theory 199. E. Fisher, 'The Rise of Transnational Environmental Law and the Expertise of Environmental Lawyers' (2012) 1 TEL 43, p. 49.
[17] Teubner (op. cit.).
[18] L. Amorello, 'A Theory of the Origin of Financial Regulation: How Legal Layers Shape International Financial Systems' in F. Fiorentini and M. Infantino (eds.), *Mentoring Comparative Layers: Methods, Times, and Places Liber Disciplinorum Mauro Bussani* (Springer 2020), p. 156. See, in particular, ibid, fn3.
[19] F.H. Knight, *Risk, Uncertainty and Profit* (Kelley 1964 (original 1921)), pp. 233–234. See also A. Arcuri, 'Reconstructing Precaution, Deconstructing Misconceptions' (2007) 21 Ethics & International Affairs 359.

disruptions.[20] Law's resistance to adaptability can be explained by several reasons. The focus here is on phenomena that have featured mainstream economic thought (e.g., the postulate of market efficiency, below, 3.2) and have been assumed in current approaches to climate-related risk (e.g., disclosures, below, 3.2). To illuminate such phenomena, this paper infuses legal scholarship with findings from behavioral law and economics, the sociology of law and criminal sociology.[21] The role of culture, notably organizational culture and the misfires it can generate, will also be explored to illustrate a possible path forward for responsive regulation.[22]

Responsive regulation offers several prospects to climate-related financial risk in pension funds: from responsive regulation, this paper derives consequences for adjudicative bodies and prospective regulation by public authorities (below, 5–6). Deploying responsive regulation is a methodological choice that can further enable (transnational) environmental law scholarship to be a catalyst for reform, rather than a reactive study.[23] In particular, responsive regulation, pertaining to public policy, offers a promising toolkit of analysis and proposals. Successfully applied to counter white-collar and corporate crimes,[24] responsive regulation has been envisaged to help prevent crises such as the 2007 Global Financial Crisis and related meltdowns posing systemic risks to the financial markets.[25] Furthermore, responsive regulation allows to interlace the local, national, regional and international levels of regulation and elucidate the pivotal role of private actors for channeling regulation in their organization.[26]

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[20] E. Fisher, E. Scotford and E. Barritt, 'The Legally Disruptive Nature of Climate Change' (2017) 80 Modern Law Review 173.
[21] See below, paras 3 and 4.
[22] E. Fisher and others, 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21 Journal of Environmental Law 213, pp. 241–242, remark on the need to deepen the interrelationship between local, national, regional and international environmental laws, as well as the appreciation of legal culture.
[23] On reactive environmental law scholarship, see Fisher and others (2009, op. cit.), p. 229. See also Heyvaert and Etty (op. cit.), pp. 6–7.
[24] A. Freiberg, 'Researching White-Collar Crime: An Australian Perspective' in M.L. Rorie, *The Handbook of White-Collar Crime* (John Wiley & Sons 2019), p. 419.
[25] J. Braithwaite, 'Conclusion: Cultures of Redemptive Finance' in J. O'Brien and G. Gilligan (eds.), *Integrity, Risk and Accountability in Capital Markets: Regulating Culture* (Hart 2013).
[26] Ibid, pp. 278–279.

Last, a study recently found that scholarship has steadily overlooked climate change litigation against financial entities.[27] Moreover, few studies have engaged with the impact of climate change on financial actors.[28] This paper aims to contribute to enhanced discussion on the topic.

2. MCVEIGH V RETAIL EMPLOYEES SUPERANNUATION TRUST

In 2018, then 23 year-old ecological landscaper Mark McVeigh sued Retail Employees Superannuation Trust (REST Trust), where he has contributed since 2013 and cannot access his retirement savings until 2055. Before the Federal Court of Australia, McVeigh alleged that REST Trust violated Australia's 2001 Corporations Act by failing to provide requested information on the fund's assessment and management of climate-related financial risk,[29] thus impairing McVeigh's informed decision about the fund management and its financial condition. In an amended complaint, McVeigh added that REST Trust breached its duties as a trustee and violated Australia's Superannuation Industry (Supervision) Act of 1993 (SIS Act) by failing to demand its investment managers' information on climate-related financial risk for REST Trust's Board of Directions to consider.[30] Moreover, McVeigh deemed REST Trust non-compliant with the SIS Act by failing to ensure that the fund disclosure and management of climate-related financial risk complied with TCFD recommendations, a voluntary initiative that has catalyzed the study and practice of climate-related financial risk (below, 3.1).[31]

[27] J. Setzer and L.C. Vanhala, 'Climate Change Litigation: A Review of Research on Courts and Litigants in Climate Governance' (2019) 10 WIREs Climate Change 1, p. 7, who refers to the exception offered by B. Franta, 'Litigation in the Fossil Fuel Divestment Movement' (2017) 39 Law & Policy 393 and J. Solana, 'Climate Litigation in Financial Markets: A Typology' (2019) TEL 1.
[28] F. Lamperti and others, 'The Public Costs of Climate-induced Financial Instability' (2019) 9 Nature Climate Change 829, 829.
[29] Corporations Act, s 1017C and SIS Act, s 52(2)(j).
[30] SIS Act, s 52(2)(b) and (c); ibid, s 52(6)(a).
[31] *McVeigh* (amended complaint, op. cit.).

In January 2019, upon McVeigh's application, Justice Nye Perram considered the issuance of a "maximum cost order." In most matters adjudicated by Australia's Federal Court, the unsuccessful party bears part of the legal costs of the successful party, though maximum cost orders limit the succumbing party's liability at the end of judicial proceedings. As such, maximum cost orders allow plaintiffs to bring a matter in the public interest.[32] In examining the maximum cost order application, Judge Perram remarked that the case was not "a dry Chancery suit."[33] Rather, it seemed to "raise a socially significant issue about the role of superannuation trusts and trustees in the current public controversy about climate change."[34] The judge further commented that the "basic structure of the Applicant's case" was "relatively straightforward and not hopeless." Conclusively, the case was ascribed to litigation in the public interest.[35] But absent some relevant information on McVeigh's assets and willingness to pursue the proceedings short of a cost cap, the judge refrained from issuing the maximum cost order and reserved the matter for subsequent phases of the proceedings.[36]

REST's arguments for the trial, unfortunately, have not been disclosed and can only be summarized through the words of Justice Perram. First, REST disputes the public interest character of the litigation.[37] Second, it replied to *McVeigh*'s prompts for more information by pointing to publicly available information on its website and the assurance that climate change is a relevant consideration at REST, short of providing plaintiff with further details.[38]

Scheduled for trial in 2020, *McVeigh* appears to be the first lawsuit worldwide against a retail fund, namely a fund offering income retirement arrangements to the general public. Such

[32] FC Rules r 40.51. *Australian Capital Territory Supreme Court in Kent v Cavanagh* (1973) 1 ACTR 43, at 55; *Arnold v Queensland* (1987) 73 ALR 607, at 621–622 and 635; and *Woodlands v Permanent Trustee Company Limited* [1995] FCA 1388; (1995) 58 FCR 139 at 23ff.
[33] *McVeigh v Retail Employees Superannuation Pty Ltd* [2019] FCA 14, at 9.
[34] Ibid.
[35] On both points, see ibid at 13.
[36] Ibid at 12–20.
[37] Ibid at 3.
[38] Ibid at 5.

a circumstance is of consequence. In the 2000s, Australia's retail funds rose exponentially as opposed to a relative decrease in public and corporate sector funds. This occurrence can be attributed to changes in legislation that would favor the management of pension funds within economies of scale, as well as greater employment turnover and shifts among work sectors.[39] As Australian retail funds currently top all other fund types in the country in terms of asset value,[40] litigating *McVeigh* would affect a host of beneficiaries.

Furthermore, *McVeigh* can revive the debate on how Australian retail funds are solving triangular conflicts of interests. In fact, retailer pension funds are governed by for-profit trustees, which oversee fund managers and advisors operating in open commercial markets. Pursuant to an amendment to the Superannuation Industry (Supervision) Act 1993 (the SIS Act), retail trustee directors shall prioritize pension fund member benefits over company shareholder profits,[41] which may have shorter timeframes than pension benefits. In fact, superannuation funds must perform the trustee's duties and exercise the trustee's powers "*in the best interests of the beneficiaries*."[42] The wording clearly shows that the SIS Act was built upon trust law[43] and does not allow any derogation from this fiduciary duty.[44] But what lies in beneficiaries' best interests has yet to be elucidated in either legislation or case law.[45] To wit,

[39] W. Sy, 'Pension Governance in Australia: An Anatomy and an Interpretation' (2008) 1 Rotman Int'l J Pension Management 30, p. 34. See also G. Thompson, *Risk-Based Supervision of Pension Funds in Australia* (The World Bank, Policy Research Working Paper 4539 (2008)), pp. 4–8.
[40] Sy (op. cit.), p. 34.
[41] *Superannuation Legislation Amendment (Trustee Obligations and Prudential Standards) Act 2012* (Cth), Section 52(2)(c). Explanatory Memorandum to the Superannuation Legislation Amendment (Trustee Obligations and Prudential Standards) Bill 2012. See P. Hanrahan, 'Legal Framework Governing Aspects of the Australian Superannuation System' (Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry, Background Paper 25 (2018)), p. 16. On such conflicts before law amendments, see Sy (op. cit.), pp. 35–36.
[42] *Superannuation Legislation Amendment (Trustee Obligations and Prudential Standards) Act 2012* (Cth), Section 52(2)(c) (emphasis added).
[43] S. Donald and L. Butler Beatty, 'Introduction' in *The Evolving Role of Trust in Superannuation* (The Federation Press, 2017), pp. 6–7.
[44] M. Moshinsky, *The Continuing Evolution of the 'Best Interests' Duty for Superannuation Trustees from* Cowan v Scargill *to the Current Regulatory Framework Federal Court of Australia* (2018 Superannuation Conference: Order in the House), pp. 5ff.
[45] Ibid, pp. 2–3.

shall trustees apply the best interests mandate only to investment management procedures? Or shall they also scrutinize the substance of investment management decisions, namely the material choices the investment management makes when managing the fund on behalf of trust's beneficiaries,[46] for example in investments that can be impacted by climate change?

Clarifying fiduciary duties in *McVeigh* can also elucidate pension fund climate-related financial risk and duties in other jurisdictions. The topic is hot and burning, and materializes in similar terms outside of Australia.[47] In most countries, pension arrangements result from unfunded public schemes, publicly mandated contributory schemes, and voluntary private retirement savings.[48] In the context of pension funds, fiduciary duties exist to ensure that individuals or entities entrusted with other people's money act in the interest of their beneficiaries, behaving honestly and impartially (duty of loyalty), as well as prudently and diligently according to the beneficiaries' instructions (duty of care and diligence).[49] Fiduciary duties are encased in both common and civil law traditions even though the terminology and enforcement mechanisms may differ.[50] And yet, a number of pension fund trustees construe fiduciary duties as a mandate to pursue maximum returns on investments, often in the short term: this mandate would thus obfuscate considerations unrelated to profit maximization,[51] such as climate change. But is this construction legitimate?

[46] On such doubt, see ibid, pp. 18–19.
[47] See, e.g., Shift Action Pension Wealth and Planet Health, *Canada's Pension Funds and Climate Risk: A Baseline For Engagement* (2019), and J. Øyrehagen Sunde and E. Colombo, 'Look to Norway – Klimasøksmål i klimaendringane sin tidsperiode' (Energi og Klima, 26 Sept. 2017, https://energiogklima.no/kommentar/look-to-norway/).
[48] A.R. Musalem and R.J. Palacios, *Public Pension Fund Management Governance, Accountability, and Investment Policies* (Proceedings of the Second Public Pension Fund Management Conference, May 2003), p. 2. The Australian Prudential Regulatory Authority (APRA) classifies the Australian pension system (superannuation) into four major types: corporate, public sector, industry and retail, see Sy (op. cit.), p. 30.
[49] UNEP-FI/PRI (op. cit.), pp. 10ff. J. Sandberg, '(Re-)Interpreting Fiduciary Duty to Justify Socially Responsible Investment for Pension Funds?' (2013) 21 Corporate Governance: An International Review 436, p. 437.
[50] UNEP-FI/PRI (op. cit.), p. 12.
[51] See also Sandberg (op. cit.), p. 437.

Notwithstanding the final result in the case,[52] *McVeigh*'s complaint can lead Australia's Federal Court and other courts to a needed reconceptualization of pension fund fiduciary duties in a time of climate change and growing threat from bushfires. In particular, courts may articulate the duty, rather than the permission, for pension funds to take into account climate-related financial risk.[53] As previously remarked (above, 1.2), the aim of this paper is to draw implications from *McVeigh* for judicial determinations and regulation by public authorities, and tie such case to projections of litigation and regulation in the future. Conversely, I do not aim to suggest how the court in *McVeigh* should adjudicate the case, or how the parties to the case shall defend it. The prism through which *McVeigh* is analyzed is transnational law, particularly the TCFD instruments, which are defining the discourse and regulatory environments on climate financial risk (above, 1.2) and are reviewed in the next section (below, 3.1).

3. DISCLOSURES: THE "BUSINESS CASE" OF CLIMATE-RELATED FINANCIAL RISK

3.1 The Task Force on Climate-Related Financial Risk: Pension Funds

Climate change surfaced in the voluntary practice of socially responsible investment (SRI) in the 1990s.[54] But the SRI niche was unable to influence investment practices; moreover, public regulation—especially at the state level—was judged as either missing or inadequate.[55] The term "climate-related financial risk" appears to have come to the fore in 2015, when the Financial Stability Board nominated an industry-led task force to analyze risk disclosures in

[52] On the value of litigation going beyond a legal victory, see, e.g., J. Peel and H.M. Osofsky, *Climate Change Litigation. Regulatory Pathways to Cleaner Energy* (CUP 2015), p. 28.
[53] See also S. Barker and others, 'Climate Change and the Fiduciary Duties of Pension Fund Trustees – Lessons from the Australian Law' (2016) 6 J Sustainable Finance & Investment 211, p. 217.
[54] B.J. Richardson, 'Climate Finance and Its Governance: Moving To a Low Carbon Economy through Socially Responsible Financing?' (2009) 58 ICLQ 597, p. 601.
[55] On the SRI sector's niche, see ibid, pp. 609 and 612, and regulatory gaps, p. 626.

climate change matters, the previously mentioned TCFD.[56] The level of influence that the TCFD has since gained, especially in the aftermath of its 2017 Recommendations, partly originates from a convergence of events in 2015: the momentum on the role of finance for sustainable development, exemplified by Agenda 2030, and the first international climate treaty provisions engaging with the financial sector, contained in the Paris Agreement.[57] The 2017 Recommendations, released after two public consultations, have been met with wide favor by countries, civil society, and economic organizations, yielding to applications of the Recommendations at the national, regional, and global level.[58]

It is fair to say that the 2017 Recommendations make a "business case" regarding climate change. Rather than hinging on ethical or social responsibility considerations, the Recommendations tackle climate change as a financial risk. They divide climate-related financial risk into two categories. First, climate-related financial risk affects assets as a physical risk, either acute (event-driven) or chronic (long-durational).[59] Second, climate-related risk can pose financial liabilities as a transition risk, encompassing policy and legal risks, as well as market, technology, and reputational risks. *Ratione personae*, the Recommendations' scope encompasses organizations in the financial sector, including insurance companies, banks, asset

[56] On the financial stability board, see Newman and Posner (op. cit.), pp. 38–39.
[57] See UNGA, *Transforming our world: the 2030 Agenda for Sustainable Development* (A/RES/70/1, 21 Oct. 2015), SDG 17, but cf the unsatisfactory role of companies in Agenda 2030, as remarked by A. Aseeva, '(Un)Sustainable Development(s) in International Economic Law: A Quest for Sustainability' (2018) 10 Sustainability 4022, p. 17. 2015 Paris Agreement on Climate Change, FCCC/CP/2015/L.9/Rev.1, Arts. 2(1)(c), Art. 6(8), Art. 9(3), and Art. 11(1).
[58] On applications at the national, regional, and global, see NOU 2018: 17 Klimarisiko og norsk økonomi (Norway); Communication from the Commission — Guidelines on non-financial reporting (methodology for reporting non-financial information) [2017] C/2017/4234 OJ C 215 (EU); J. Colas and others, *Extending Our Horizons. Assessing credit risk and opportunity in a changing climate: Outputs of a working group of 16 banks piloting the TCFD Recommendations. PART 1: Transition-related risks & opportunities* (UNEP FI, April 2018) and R. Connell and others, *Navigating a New Climate. Assessing credit risk and opportunity in a changing climate: Outputs of a working group of 16 banks piloting the TCFD Recommendations. PART 2: Physical risks and opportunities* (UNEP FI, July 2018). The Recommendations were endorsed by 785 supporters, including 671 firms and 114 other organizations such as industry associations. See TCFD, *2019 Status Report. Task Force on Climate-Related Financial Disclosures* (2019), p. 110.
[59] TCFD, *Recommendations of the Task Force on Climate-Related Financial Disclosures – Final Report* (June 2017), pp. 5–6 and 16.

managers, and asset owners (with pension funds included in the latter).[60] Moreover, the Recommendations are addressed to organizations belonging to non-financial sectors, which are grouped in three areas: energy, materials, and buildings; transportation; and agriculture, food, and forestry products.[61] *Ratione materiae*, the Recommendations adopt an approach based on voluntary disclosures concerning climate-related financial risk in four clusters: governance, strategy, risk management, and metrics and targets.[62]

The financial take on climate risk is apparent from the recommendation for all organizations to disclose their climate-related financial risk in their mainstream (i.e., public) annual financial filings.[63] Not only does such a circumstance increase the accuracy and specificity of disclosures, particularly through the involvement of audit committees and chief financial officers, but it also fosters transparency, helps develop disclosure techniques, and facilitates shareholder engagement.[64]

Remarking on pension funds, the Recommendations endow them with substantial guidance on the assessment, management, and disclosure of their climate-related financial risk. Similar to organizations under the Recommendations' purview, pension funds are encouraged to apply scenario analysis. To wit, they are to develop strategic plans based on a 2°C temperature increase limit (or lower) scenario, which the Recommendations explicitly ground in Article 2(1)(a) of the Paris Agreement.[65] In view of this, the Recommendations encourage all organizations to disclose their scope 3 emissions according to the widely influential Greenhouse Gas Protocol. Scope 3 emissions occur throughout organizations' value chain (both upstream

[60] Ibid, pp. iv and 15–16.
[61] Ibid.
[62] Ibid, pp. v and 13ff.
[63] Ibid, pp. iv, v, and 17.
[64] Ibid.
[65] Ibid, p. 27. On scenario analysis as an innovative approach, see A. Johnston, 'Climate-Related Financial Disclosures: What Next for Environmental Sustainability?' (2018) No. 2018-02 University of Oslo Faculty of Law Research Paper, p. 13.

and downstream), but are not commonly disclosed at the time being.[66] The bold emphasis on scope 3 emissions is, however, discounted by the recommendation of such disclosure only "if appropriate," where the circumstances and level of appropriateness have not been specified.[67]

As a relevant investment metric for asset owners to disclose, the Recommendations coined the "weighted average carbon intensity metric," measuring exposure to carbon-intensive companies expressed as tons CO_2e / $m Revenue, namely CO_2 equivalent tons per revenues measured in millions of dollars.[68] The formula, however, fails by default to include scope 3 emissions.[69] This implies the TCFD argument that organizations will generally fail to disclose scope 3 emissions even when appropriate. Moreover, the weighted average carbon intensity metric applies only where data are available or can be reasonably estimated for each fund or investment strategy.[70]

Overall, given its reception, the TCFD Recommendations are defining the discourse on climate-related financial risk. This comes as no surprise. The underpinning of financial regulation rests with maintaining stability against the risk of disruption,[71] and, from social, economic, psychological, and legal perspectives, climate change is exceptionally disruptive.[72] In this context, the TCFD Recommendations appear to be the first instrument to specify and propose a financial response to the exceptional economic disruptions that climate change signifies across sectoral and national lines. In turn, regulating the economic disruptions of climate change can help elucidate social, psychological, and legal disruptions, at least in such

[66] TCFD Recommendations (2017, op. cit.), p. 22. On sparse practice concerning the scope 3 emissions' disclosure, see OECD/CSDB, *Climate Change Disclosure in G20 Countries: Stocktaking of Corporate Reporting Schemes* (2015), p. 31.
[67] TCFD Recommendations (2017, op. cit.), p. 22.
[68] TCFD, *Implementing the Recommendations of the task-Force on Climate-Related Financial Disclosures* (2017), pp. 37ff. See especially ibid, p. 43 for the formula.
[69] See ibid, p. 43.
[70] See ibid, p. 37.
[71] Amorello (op. cit.), p. 155. See also J.E. Stiglitz, 'The Role of the State in Financial Markets' (1993) 7 World Bank Econ Rev 19.
[72] See, e.g., Fisher, Scotford and Barritt (op. cit.), *passim*.

a specific subject matter as climate-related financial risk in pension funds. In this regard, the TCFD Recommendations contain significant guidelines for pension funds to disclose their climate-related financial risk. But some critiques can be levelled as to whether the approach transpiring from the TCFD Recommendations is sufficient to regulate the systemic risk posed by pension funds to financial and social stability, given the lack of stringency on crucial metrics (below, 3.2 ad 4.1).

3.2 BAU Practice, Systemic Risk, and Fallout

As a critique of the TCFD Recommendations, it was rightly held that their prime objective was to encourage disclosures and transparency under the assumption that markets respond rationally to information and would move from "brown" to "green" assets.[73] But *McVeigh* (above, 2) shows that pension funds can altogether fail to disclose relevant information not only because the TCFD Recommendations are voluntary, but also because they can be at once bold and conservative (e.g, see above, 3.1 on scope 3 emissions); hence, they seem to allow for "grey zones" where voluntary disclosure is not necessarily sufficient to regulate systemic risk.

Importantly, the Recommendations' disclosure-based approach may end up reinforcing business as usual (BAU) practices. This is supported by data on the world's 100 largest pension funds: only 10% of such funds offer climate-aware investment options, and less than 1% of their assets is invested in low-carbon solutions.[74] Moreover, disclosure-based approaches epitomize neoliberal financial governance whereby the solution to financial stability risk is risk disclosure. Whenever entities make disclosures, the assumption is that the markets will unleash their lightning bolt of "market discipline" as soon as excessive risk taking and indefensible risk

[73] N. Ameli and others, 'Climate Finance and Disclosure for Institutional Investors: Why Transparency is Not Enough' (2019) 160 Climatic Change 565.
[74] AODP, *Pensions in a Changing Climate* (2018), pp. 25 and 44.

management emerge.[75] But even upon sound disclosures, does the market react efficiently? Overconfidence in market efficiency to optimally price all publicly available information at all times animates both public institutions and the private sector, notwithstanding critical literature.[76] In this context, it was shown that the market has not optimally priced information, also when available, and financial entities have remained largely unaccountable in environmental matters, including climate change.[77]

The consequences of the above can be dire and systemic. It was recently found that adverse shocks on the fossil fuel sector, along with increased volatility in other climate-relevant sectors, could largely threaten pension funds' equity holdings portfolios in the European Union and the United States.[78] Moreover, the European Systemic Risk Board (ESRB) has calculated European financial entities' potential loss range as between €350bn and €400bn, even when the transition to a low-carbon society is assumed to occur in orderly fashion.[79] In Australia, the Reserve Bank has signaled that superannuation and investment funds are exposed to climate-related financial risk both through direct investments in carbon-intensive industries and indirect investments in banks that lend to these industries.[80] This negative outlook worsens when considering the societal role of pension funds. Providing pensioners with benefits, these funds are critical to the tenability of the welfare state, which posits society's responsibility to provide all citizens with

[75] B. Christophers, 'Climate Change and Financial Instability: Risk Disclosure and the Problematics of Neoliberal Governance' (2017) 107 Annals of the American Association of Geographers 1108, pp. 1109 and 1113ff.
[76] On the efficient markets hypothesis, see E.F. Fama, 'Efficient Capital Markets: A Review of Theory and Empirical Work' (1970) 25 J of Finance 383. On critical theory, see, e.g., G.L. Clark, 'Myopia and the Global Financial Crisis: Context-specific Reasoning, Market Structure, and Institutional Governance' (2011) 1 Dialogues in Human Geography 4, p. 7, and R. Shiller, 'Bubbles, Human Judgment, and Expert Opinion' (2002) 58 Financial Analysts J 18, p. 23.
[77] See, e.g., Barker and others (op. cit.).
[78] S. Battiston and others, 'A Climate Stress-test of the Financial System' (2017) 7 Nature Climate Change 283, p. 285, calculating a 45.2% exposure for Insurance and Pension Funds.
[79] ESRB Advisory Scientific Committee, *Reports of the Advisory Scientific Committee*, ASC Report No 6 (2016), p. 12.
[80] Financial Stability Review – October 2019 (Box C Financial Stability Risks From Climate Change), available at: https://www.rba.gov.au/publications/fsr/2019/oct/box-c-financial-stability-risks-from-climate-change.html. Last access: 27 Feb. 2020.

a certain level of social goods.[81] Even in states that do not define themselves as progressive welfare states, for instance liberal (welfare) systems like Australia, public regulation of the pension system has risen, resulting in increased public pension provisions and mandated non-state pensions.[82]

From a regulatory perspective, the cognitive dissonance between the assumption of market efficiency and climate financial risk is concerning and suggests that climate risk *disclosures*, as propounded by the TCFD (above 3.1), are necessarily limited. The rationality of the *homo oeconomicus* has long been disproved: in their bounded rationality, market players construct simplified models[83] and prefer being wrong as part of a group (so-called herding) to countering the mainstream.[84] Herding stems not only from human psychology, but also from regulation, requiring pension funds to apply fiduciary duties under prudent person standards, namely by following conventional approaches.[85] Hence, the problem lies with regulation assuming market efficiency, short of factoring herding in the markets.

To this end, climate-related financial risk adds a complication: it exceeds the modern portfolio theory's approach to risk as normally distributed. In climate change matters, risk is not distributed normally: rather, it is distributed as "black swans," unexpected events that can be explained only after they occur (above 1.1).[86] As such, climate risk is distributed with "fat

[81] B. Baker, 'The Welfare State: Objectives, Subordinate Principles and Justifying Grounds' in A. Peczenik and M.M. Karlsson (eds.), *Law, Justice and the State Essays on Justice and Rights*, vol 1 (1995), p. 170.
[82] P. Bridgen, 'The Retrenchment of Public Pension Provision in the Liberal World of Welfare during the Age of Austerity—and Its Unexpected Reversal, 1980–2017' (2019) 53 Social Policy & Administration 16, p. 28. On this classification of Australia, see the seminal G. Esping-Andersen, *The Three Worlds of Welfare Capitalism* (Polity Press 1990), pp. 48–49. Cf objections to the classification in C. Deeming, 'The Lost and the New 'Liberal World' of Welfare Capitalism: A Critical Assessment of Gøsta Esping-Andersen's The Three Worlds of Welfare Capitalism a Quarter Century Later' (2017) 16 Social Policy and Society 405, pp. 409–410, recalling Esping-Andersen's difficulties to classify Australia.
[83] H.A. Simon, *Models of Man: Social and Rational: Mathematical Essays on Rational Human Behavior in a Social Setting* (Wiley 1957). See also human and financial markets' myopia in Clark (2011, op. cit.).
[84] J. Thomä and H. Chenet, 'Transition Risks and Market Failure: A Theoretical Discourse on Why Financial Models and Economic Agents May Misprice Risk Related to the Transition to a Low-Carbon Economy' (2017) 7 J Sustainable Finance & Investment 82, p. 92. See also Shiller (op. cit.), pp. 21-22.
[85] Shiller (op. cit.), p. 22.
[86] Taleb (op. cit.) and above para 1.

tails," whereby past data cannot help predict the occurrence of climate-related events, and the probability of catastrophic outcomes is not sufficiently small to provide comfort.[87] In short, when regulation leans on existing instruments concerning investment risk, it incorporates inaccurate assumptions for climate-related risk distribution.

A further complication attached to climate-related financial risk is widely known as the "tragedy of the horizons."[88] Investors apply investment horizons that are considerably shorter than those that would account for climate-related financial risk in an accurate way.[89] Even pension funds, known as long-term investors, routinely follow short-term investment horizons by relying on backward-looking or short-termed ratios in credit and equity research analysis (e.g., 3–5 years).[90] Such short-sightedness will prove fatal to regulation meant to anticipate systemic risk and provide future generations of citizens with their pension and a stable climate.

In the TCFD Recommendations, however, regulation is assumed to be "light-touch," aimed at "creating the conditions" or "developing the frameworks" for markets to carry out their efficiency promise.[91] Importantly, this is the approach that *McVeigh* seems to counter (above, 2). By asking Australia's Federal Court to rule not only on *disclosure* duties, but also on *due diligence* obligations upon REST Trust, Mark McVeigh articulates the need for a normative

[87] M.L. Weitzman, 'Fat-Tailed Uncertainty in the Economics of Catastrophic Climate Change' (2011) 5 Rev Environmental Economics and Policy 275, p. 286.
[88] M. Carney, *Breaking the Tragedy of the Horizon – Climate Change and Financial Stability* (Speech, 29 Sept. 2015).
[89] B. Christophers, 'Environmental Beta or How Institutional Investors Think about Climate Change and Fossil Fuel Risk' (2019) 109 Annals of the American Association of Geographers 754. See also Carney (op. cit.).
[90] M. Naqvi and others, *All Swans Are Black in the Dark: How the Short-Term Focus of Financial Analysis Does not Shed Light on Long Term Risks* (2° Investing Initiative & Generation Foundation Project, 2017), pp. 40, 45, and 48. Long-term investors are not demanding long-term risk assessments. See ibid, pp. 58 and 62. Clark (2011, op. cit.), p. 13. See the complication of return requirements for pension funds given the different stakes in the management, W.A. Grier, *Credit Analysis of Financial Institutions* (2nd edn, Euromoney Books 2007), p. 327. Cf how public pension funds can be 'frontier investors,' countering short-termism, J. Singh Bachher, A.D. Dixon and A.H.B. Monk, *The New Frontier Investors: How Pension Funds, Sovereign Funds, and Endowments are Changing the Business of Investment Management and Long-Term Investing* (Palgrave Macmillan 2016), pp. viii and 30ff.
[91] See Christophers (2017, op. cit.), p. 1118.

approach to pension fund disclosure duties, and an extension of the field of climate-related risk disclosures to embrace climate-related risk due diligence.

Such a take is promising. By requiring that a retail pension fund actively oversees fund managers and advisors making investment decisions,[92] *McVeigh* is challenging the current hands-off attitude by pension funds vis-à-vis investment executives, with pension funds mainly dealing with administrative, rather than investment issues.[93] Moreover, by requiring that executives comply with the TCFD Recommendations not only when disclosing climate-related risk, but also when managing it,[94] *McVeigh* underscores the value of due diligence within and beyond the Recommendations. Such a move is both compatible with the Recommendations' content, and socio-legal studies on the role of organizational culture and deeply held epistemological conventions that may counter climate-risk appreciations, provoking misfires (below, 4).

4. MISFIRES: THE "CULTURAL CASE" OF CLIMATE-RELATED FINANCIAL RISK

4.1 The Misfires of Climate Risk Disclosures

McVeigh's demand for the normative reconceptualization and control over pension fund disclosure and due diligence (above, 3.2) seems to assume that the "business case" of climate change is insufficient for pension funds to align their investment portfolio to their risk assessment. *McVeigh*'s legal stance toward climate-related financial risk is not pacific in literature: many recognize that the TCFD has already carried out meritorious work to influence disclosure regimes. Defining climate risk as a financial risk and dividing it into physical and

[92] *McVeigh* (amended complaint, op. cit.), p. 4.
[93] Sy (op. cit.).
[94] *McVeigh* (amended complaint, op. cit.), p. 4. For an approach going beyond disclosures, see B. Sjåfjell, 'Beyond Climate Risk: Integrating Sustainability into the Duties of the Corporate Board' (2018) 23 Deakin L Rev 41.

transition risks, as per the TCFD work, jump started the study and practice of climate risk by turning an amorphous concept into assessable components.[95] Such "codification" has arguably made climate-related financial risk calculative,[96] but calculation models are not neutral. In fact, calculation models have also facilitated descriptions of reality that favor the economic interests of organizations.[97] Short of supervision, by constructing risk in a particular way, organizations may be able to distribute the consequences of their misfires among non-market actors, marginalized consumers, or the environment.[98] This dynamic is well-known, and consists of socializing risks and internalizing rewards (the latter being mainly profit).[99] Beyond being construed in a way that facilitate the organizations, risk assessments may be altogether misleading, biased, or unaware. I remark on each of these in the following, in order to show that business as usual through disclosure strategies is not a regulatory problem only (above, 3.2), but also a problem for business and financial entities. Hence, the apparent need for a normative, rather than only voluntary, discussion on the TCFD and climate-related financial risk.

Remarking on how organizations can be misled by their own calculations, empirical research reveals that some constructions of risks have led to a number of "misfires," meaning the upsetting of risk calculations due to unaccounted factors.[100] For example, the evaluation of an investment project in terms of sole CO_2 emissions led EnergyCo, a large Australian energy company, to brand coal-seam gas production as cleaner than other fossil fuel-powered generation sources.[101] Simultaneously, EnergyCo downplayed the project's emissions of

[95] See also D. Nyberg and C. Wright, 'Performative and political: Corporate constructions of climate change risk' (2016) 23 Organization 617, p. 628, short of referring to the TCFD.
[96] Ibid, p. 629.
[97] Ibid, p. 633.
[98] Ibid.
[99] See also M. Mazzucato, *The Entrepreneurial State: Socializing Both Risks and Rewards*, (2018) 84 Real-World Economics Review 201.
[100] Nyberg and Wright (op. cit.), p. 618.
[101] Ibid, p. 632.

methane, a potent GHG, and did not take into account some further values. In fact, EnergyCo failed to construe climate-related risk in terms of local communities' perception of fracking as harmful from an environmental, health, and aesthetic perspective.[102] Such misfires depict the massive challenges ahead in the pursuit of a low-carbon society: while climate science has consolidated, the political debate portrays actors agonizing over how to fully respond to the science.[103]

Remarking on the "conservatism bias," pension funds may assess and revise climate-related risk in the correct direction, but they may fall short of doing so in the long run: in fact, firms and people tend to respond insufficiently to new information.[104] Entwined with the conservatism bias, the "endowment effect" can explain why pension funds may prefer the status quo, rather than a substantial sell-off of their carbon intensive portfolios. Albeit possibly belonging to a carbon bubble, some carbon-intensive investments still rank among the most profitable on the markets[105] and pension funds may want to minimize the risk of profit loss by selling them.[106] Moreover, existing investment methods and tools, notably leading to fossil fuel investments, have proved successful in the past: past successes prompt firms to use the same methods and tools even though they may fail in the future.[107]

Remarking on unawareness, the "business case" of climate-related financial risk may be insufficient in the aftermath of a misfire. Intuitively, after a misfire, entities would modify assessment models and attempt to avoid further misfires by adopting better risk assessment and management procedures, and accounting for uncertainties.[108] But even misfires do not utterly

[102] Ibid.
[103] Ibid, p. 621.
[104] On the conservatism bias, see Shiller (op. cit.), p. 20.
[105] See the BHP and Rio Tinto Group participations, as explained in M. Burgess, *Wildfires Are Forcing Aussie Pension Funds to Be More Green* (Bloomberg, 13 Feb. 2020).
[106] On regret avoidance as one of the explanations of the endowment effect, see R. Korobkin, 'Wrestling with the Endowment Effect, or How to Do Law and Economics without the Coase Theorem' in E. Zamir and D. Teichman (eds.), *The Oxford Handbook of Behavioral Economics and the Law* (OUP 2014), p. 315.
[107] E. Schoenberger, *The Cultural Crisis of the Firm* (Blackwell 1997).
[108] On the distinction between risks and uncertainties, see above, para 1.2.

dismantle the entity's construction of risks: such construction is not modified, but generally adapted to the results.[109] Hence, signals of potential danger are normalized under the influence that the history, culture, political environment, and organization of the firm exert on the individuals working therein.[110] In climate change matters, such normalization may lead to "carbon lock-ins," which are processes reinforcing and perpetuating carbon-intensive activities over time, and possibly delaying technological transition for decades.[111] As such, pension funds can find themselves enmeshed in carbon lock-ins, notwithstanding the TCFD Recommendations.

Such misfires are ongoing. An example is offered by Australia. Australian regulators have issued voluntary guidance on disclosures, including of climate risk,[112] but climate risk disclosure obligations have not been enforced,[113] nor are they covering all relevant information to a sufficient degree.[114] Moreover, sustained engagement with climate change issues has not yet substantially changed corporate behavior in Australia.[115] If business and financial entities are to become part of the solution to climate change, rather than only part of the problem,[116] more research is needed on how to complement the discourse on climate risk disclosures with a normative discourse based on regulation that is not only voluntary. A normative discourse, for instance, would purposefully look at how due diligence standards could assist entities to

[109] D. Vaughan, 'The Normalization of Deviance: Signals of Danger, Situated Action, and Risk' in H. Montgomery, R. Lipshitz and B. Brehmer (eds.), *How Professionals Make Decisions* (Lawrence Ehrlbaum Associates 2005), pp. 258–259. At times, potential dangers are followed up and modified, ibid, p. 261.
[110] Ibid, pp. 259ff, especially p. 266.
[111] The originator of research on carbon 'lock-ins' is G.C. Unruh, 'Escaping Carbon Lock-in' (2002) 30 Energy Policy 317, who divides them in technological, organizational, industrial, societal and institutional sources. See ibid, p. 318.
[112] AASB-AuASB, Climate-related and Other Emerging Risk Disclosures: Assessing Financial Statement Materiality Using AASB Practice Statement, 2 Dec. 2018, available at: https://www.aasb.gov.au/admin/file/content102/c3/AASB_AUASB_Joint_Bulletin_13122018_final.pdf. Last access: 11 Aug. 2020.
[113] Z. Caldwell, 'Corporations and Climate Change: An Investigation of Mandatory Climate Risk Disclosure in Australia,' (2020) 37 Env'l and Planning L J 3.
[114] J. Peel and others, 'Governing the Energy Transition: The Role of Corporate Law Tools' (2019) 36 Env'l and Planning L 459.
[115] B. McDonnell and others, 'Green Boardrooms?' (2020) 52 Connecticut Law Review (forthcoming).
[116] See similarly Peel and others (2019) (op. cit.), focusing on energy transition governance.

transition away from GHG-intensive business models and investments toward clean energy and sustainability practices.[117] I call this the "cultural" approach to climate-related financial risk, which is based on the socio-legal studies and is instrumental to measuring whether pension funds have fulfilled their fiduciary duties toward their beneficiaries (below, 4.2).

4.2 The Case for Due Diligence in Financial Climate Risk

Propounding a case for due diligence in financial climate risk, as the Australian case *McVeigh* does, stops short of curtailing the importance of disclosures. Rather, due diligence would complement disclosures on climate risk to ensure that the entity has control over the misfires of risk assessment that it can experience (above, 4.1). As a confirmation, the TCFD itself recognizes, albeit not too assertively, that its recommendations can be complemented by many other strategies.[118] As here introduced, the TCFD surreptitiously introduces concepts of due diligence to its disclosure-based strategies. What follows below is an exploration of how the TCFD can serve as a parameter for interpretation of due diligence in pension fund climate risk. I do not aim to show how the Federal Court of Australia shall decide *McVeigh*. Rather, in line with the aims of doctrinal law (above, 1.2), the goal is here to expose the actual or potential relevance of some portions of the TCFD instruments that have not yet emerged in legal commentaries. As instruments of transnational law, the TCFD recommendations may well serve the legal reasoning of courts around the need for the governance of climate risk in pension funds.

[117] See the focus not only on disclosures, but also due diligence, in A. Foerster, 'Climate Justice and Corporations' (2019) 30 King's Law Journal 305, pp. 317–318.
[118] The Recommendations are allegedly '*a* foundation to improve investors' and others' ability to appropriately assess and price climate-related risk and opportunities' (emphasis added), see TCFD Recommendations (2017, op. cit.), p. v. See the mechanisms that can support disclosures in Carney's view, stress testing and a price corridor (but not prudential rules), in Carney, op. cit., pp. 9 and 11.

Notwithstanding ongoing discussions on the very content of fiduciary duties, few would deny that pension funds act on behalf of their beneficiaries, subject to government regulation; this means that they act on beneficiaries' interests and for their long-term welfare.[119] It has already been remarked that the fiduciary obligation to promote private returns must take into account their public costs,[120] especially when such costs (as with carbon-intensive investments) risk misfiring and undercutting the very profits they generate. In this respect, the TCFD Supplemental Guidance for the Financial Sector, which is attached to the Recommendations, provides significant guidelines assisting courts of law with targets and metrics of disclosures, as well as standards of due diligence, when they assess pension funds' fulfillment of their fiduciary duties in terms of climate-related financial risk.

Remarking on targets, in light of the TCFD Supplemental Guidance for the Financial Sector, judiciaries that are asked to adjudicate climate change litigation and need to flesh out the requirements of the TCFD or related regulatory guidance may first evaluate whether a pension fund has established key climate-related targets (e.g., on GHG emissions, water usage, or energy usage) in line with anticipated regulation, market constraints, or other goals (e.g., efficiency, financial goals, financial loss tolerances, net revenue goals for green products and services, or to avoid GHG emissions through the product life cycle).[121] Remarking on metrics, a potent indicator of portfolio public costs is portfolio carbon footprint,[122] which the TCFD calculates as "weighted average carbon intensity metric" (see above, 3.1), admittedly only a first step in the direction toward calculating portfolio carbon intensity.[123] Such TCFD metric presently excludes scope 3 emissions;[124] and yet, judiciaries may require the inclusion of scope

[119] Clark (2011, op. cit.), p. 13.
[120] Richardson (op. cit.), p. 626.
[121] TCFD Annex (op. cit.), p. 37. See ibid for further specifications on the determination and disclosure of targets.
[122] Richardson (op. cit.), p. 626.
[123] TCFD Annex (op. cit.), p. 37.
[124] See above, para 3.1.

3 emissions as relevant in the calculation of the fund's exposure to climate-related financial risk with respect to all carbon-intensive investments.[125] Moreover, the relevance of scope 3 emissions has already been recognized in climate change litigation, notably in Australia.[126] Further metrics that the judiciary may take into account similarly concern climate-related risks—particularly water, energy, land use, and waste management—as well as climate-related opportunities (e.g., from green products and services), where relevant and applicable. Yet, the TCFD Supplemental Guidance does not detail the content of the metrics it suggests.[127]

Beyond checking on disclosures, the judiciary can rely on the TCFD to consider pension fund due diligence. As previously noted, grounded in a disclosure-based approach, the TCFD Recommendations are generally agnostic regarding due diligence (above, 3.2). And yet, in its Supplemental Guidance for the Financial Sector, the TCFD offers guidelines for climate-related financial risk due diligence.[128] Asset owners, whereunder pension funds fall, are encouraged to identify their climate-related risks, as for all other financial entities. But asset owners are given supplemental guidelines in that they should also actively engage with investees to encourage better disclosure and risk practices at the investee level in order to ultimately improve data availability.[129] Importantly, the TCFD Supplemental Guidance recommends that financial organizations describe their risk-management processes, which lie at the heart of due diligence systems. Implying that organizations have put in place procedures to "mitigate, transfer, accept,

[125] Carbon-intensive investments are here defined as 'physical assets or companies with direct or indirect exposure to high levels of GHG emissions, such as those in the fossil fuel industry, or that are heavily reliant on fossil fuels,' M. Fulton and C. Weber, *Carbon Asset Risk: Discussion Framework. WRI and UNEP-FI Portfolio Carbon Initiative* (WRI/UNEP-FI 2012), p. 11. The GHG Protocol, pointed as the relevant method for emission calculation by the TCFD (see above, para 3.1), recommends financial institutions to account for the investees' scope 3 emissions when the latter are significant compared to other source of emissions or otherwise relevant, see GHG Protocol, *Technical Guidance for Calculating Scope 3 Emissions* (2013), p. 138.
[126] See, e.g., *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7, at 489ff.
[127] TCFD Recommendations (2017, op. cit.), p. 36. The TCFD specifies that financial entities should provide metrics for historical periods in order to allow for trend analysis and, where not apparent, describe the methodologies used to calculate or estimate climate-related metrics.
[128] TCFD Annex (op. cit.).
[129] Ibid, p. 35.

or control" climate-related financial risks, the TCFD encourages them to disclose such procedures and prioritize the most material risks. In a further strand of TCFD Guidelines, asset owners in particular should evaluate their total portfolio position in terms of climate-related financial risks. Here, the TCFD is quite stringent: it recommends portfolio risk evaluations based on the transition to a lower-carbon energy supply, production, and use.[130] Further, the TCFD Guidelines imply that targets and metrics are not crucial for disclosures alone. Asset owners, in particular, should describe how they used climate-related risks and opportunity metrics in each fund or investment strategy, and—where appropriate—how metrics have changed over time and how they can be monitored.[131]

One may wonder how the proposed legal reasoning can be methodologically defensible. After all, the TCFD Recommendations is a piece of transnational law and it is acknowledged that courts are free to take it into account or not, pending its binding character in the forum state (above, 1.2). A possible answer lies in the fact that it would not be the first time for domestic courts to engage with transnational law in climate change matters.[132] In this process, transnational law becomes a parameter of interpretation by domestic courts applying *domestic* legal sources in light, *inter alia*, of the TCFD Recommendations.[133]

In any case, applying the TCFD as a parameter of interpretation of domestic law is quite straightforward: it does not require a monist legal system, where international law is automatically imported into national law short of a transforming instrument. In fact, applying the TCFD as a parameter of interpretation of domestic law equates to holding that domestic law is applied consistently with transnational law. Such consistent interpretation has been found to

[130] Ibid, p. 36.
[131] Ibid.
[132] L. Burgers, 'Should Judges Make Climate Change Law?' (2020) TEL 1.
[133] E. Colombo, '(Un)comfortably Numb: The Role of National Court for Access to Justice in Climate Change Matters' in J. Jendrośka and M. Bar (eds.), *Procedural Environmental Rights: Principle X in Theory and Practice* (Intersentia 2017).

eclipse the distinction between monist and dualist legal systems.[134] Moreover, such application is not contingent on the monist or dualist approach to international law adopted by the forum state.[135] Still, there may be different, often low-threshold, requirements for making transnational or international law a parameter of interpretation. In Australia, for instance, the requirement is that domestic provisions be able to accommodate a supranational law–compliant interpretation insofar as the statutory language permits.[136] Notwithstanding such requirements, applying domestic law consistently with transnational law or international law is the most common way for domestic courts to engage with supranational law,[137] in both common law and civil law traditions.[138]

We can derive three important takeaways from this exploration of pension fund roles in terms of climate-related financial risk. First, the "business case" of climate-related financial risk must be complemented by a "cultural case," which recognizes and accounts for markets and organizational inefficiencies. Second, the work of the TCFD is only partly disclosure-based; in fact, it also offers a valuable opportunity for courts to spell out the role of pension fund due diligence in managing climate-related financial risk. Third, *McVeigh*'s reference to the TCFD not only for disclosure strategies but also for the vindication of due diligence duties by officers and directors in pension funds seems to mirror a similar, extended, understanding of the TCFD that the Australian Prudential Regulatory Authority (APRA) has recently made. In February 2020, APRA has encouraged the adoption of voluntary frameworks to assist entities not only with assessing and disclosing climate financial risk, but also with managing it in line

[134] A. Tzanakopoulos, 'Domestic Courts as the 'Natural Judge' of International Law: A Change in Physiognomy' in J. Crawford and S. Nouwen (eds.) *Select Proceedings of the European Society of International Law*, vol 3. (Hart 2011), pp. 161–165.
[135] A. Nollkaemper, *National Courts and the International Rule of Law* (OUP 2011), pp. 143–144.
[136] Ibid, p. 162.
[137] Ibid, p. 117.
[138] Ibid, p. 148.

with the TCFD.[139] In this regard, *McVeigh* interrogates a broader conceptualization of the TCFD so that the risk of misfires in assessing financial climate risk (above, 4.1) is at least partially overcome by diligently manage such risk. Ultimately, within this broader conceptualization, the TCFD's work helps bridge the gap between voluntary and normative approaches to pension fund climate-related financial risk. It does so by offering standards and metrics that domestic courts can apply as a parameter of interpretation when adjudicating cases on climate-related financial risk in pension funds, thus making TCFD instruments and related guidance instrumental to comprehending and governing climate risk, rather than fostering uncoordinated voluntary practice.

5. REGULATION: THE "RESPONSIVE CASE" OF CLIMATE-RELATED FINANCIAL RISK

As instruments of transnational law, the TCFD recommendations may not only serve the legal reasoning of courts around the need for the governance of climate risk in pension funds and the specification of due diligence duties of officers and directors (above, 4.2): they can also inform regulation by public authorities on the same subject, usually in a complementary fashion.

The primacy of the business case over the ethical case of climate finance has already been criticized.[140] Similarly, previous sections showed that a purely business case is indeed inadequate to capture the dynamics of climate risk in pension funds. A disclosure-based voluntary approach, as purported in the TCFD Recommendations, controverts findings on market inefficiency, bias in investment decision making, and the cultural normalization of dangers in organizations (above, 3.2 and 4.1). Therefore, even short of an ethical approach, an

[139] APRA, *Understanding and Managing the Financial Risks of Climate Change* (24 Feb. 2020).
[140] Richardson, (op. cit.), *passim*.

approach based on how decisions are culturally made and embedded in pension fund climate-related risk would suggest expanding regulation from provisions on disclosures to provisions on due diligence that have more than a voluntary character. I call this the "cultural" approach to climate-related financial risk, which is instrumental to measuring whether pension funds have fulfilled their fiduciary duties toward their beneficiaries (above, 4.2).

In this context, regulation, either by courts or legislation, can be responsive.[141] The previous section portrayed only one of the possible ways by which domestic courts can rely on the TCFD. As previously noted, grounded in a disclosure-based approach, the TCFD Recommendations are generally agnostic regarding due diligence,[142] but they actually provide instruments for domestic courts to scrutinize both disclosures and due diligence in pension funds. Within the TCFD set of instruments, and specifically in the Supplemental Guidance for the financial sector, lie tools that can support courts in finding due diligence procedures, targets, and metrics. The TCFD Supplemental Guidance for the financial sector can thus help courts adapt existing rules on fiduciary duties to the complex reality of climate-related financial risk (above, 4.2).[143] Rather than a dead weight on markets, a reconceptualization of pension fund fiduciary duties and scrutiny over due diligence can respond to the urgency of climate-related financial risk by enculturating trust and institutionalizing distrust, for example by enforcing rules when pension funds appear to have abused their power.[144]

In this regard, John Braithwaite has suggestively articulated the "need for a fundamental cultural change in the way business values are seen in government, by regulators, in the courts,

[141] Reference is here to I. Ayres and J. Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate* (OUP 1992).
[142] 'Due diligence' and 'diligent' are not included in the Recommendations; moreover, risk management is considered part of disclosures, see Recommendations (2017, op. cit.), *passim* and p. v, and TCFD Annex (op. cit.), *passim*.
[143] On the need for adaptive law, see Fisher, Scotford and Barritt (op. cit.).
[144] Braithwaite (op. cit.), p. 269, short of referring to pension funds.

in the community and in business itself."[145] The legal process can in fact concretize the "story book" of financial regulatory culture in a timely fashion, before the next wave of "business confidence" and prior to the next crisis.[146] According to such responsive regulation, regulatory regimes need be specific enough, but saved from collapse through a set of overarching principles that can overcome the gaming of the rules through financial practice and embedded organizational dynamics (above, 3.2 and 4.1).[147] Rules would need to be interpreted in the light of such overarching principles by a judiciary that can identify and spell out the many rules that allow specific enforcement and the drawing of bright lines[148] on the rights and duties of pension funds to their beneficiaries. In this paradigm, newer rules should be continuously drafted for new realities.[149] At the same time, until these rules are passed, the judiciary can intervene by responsively refining existing principles in order to update rules that have become obsolete or have been gamed by the market.[150]

One such overarching principle lies in trustees' fiduciary duties to pension fund beneficiaries (above, 2). When courts adjudicate this principle, the judicial process can create spaces for dialogue and trust to build between Wall Street and Main Street,[151] where pension funds' potential responsibility is not punitive and passive, but rather preventative and active.[152] This is indeed a type of climate justice that was perceptively deemed "forward-looking" and able to address "distributive issues surrounding present and future responsibility to pay for climate change mitigation and adaptation, as well as associated intergenerational justice issues."[153] The distributive and intergenerational justice issues are particularly vivid in pension fund climate

[145] Ibid, p. 270.
[146] Ibid, pp. 270 and 272.
[147] Ibid, p. 274.
[148] Ibid, pp. 274–275.
[149] Ibid, p. 275.
[150] Ibid, p. 287.
[151] Ibid, p. 269.
[152] Ibid, p. 287. This type of justice can be called 'holistic,' because it can be conducive to deliberations on ethical cultures in finance. See ibid, p. 279.
[153] Foerster (op. cit.), pp. 308 and 318.

risk as younger beneficiaries may see their future pensions endangered by today's negligent investment practices. Through the support of nimble legal institutions, be they courts of law or regulators, pension funds can understand what went wrong in their risk construction and management, and beneficiaries can be actively responsible for contributing to the prevention of future misfires.[154]

Methodologically, the TCFD offers the opportunity to analyze the intersection between transnational law, regulation by public institutions, and regulation by domestic courts. Such analyses will likely increase in number thanks to the visibility of this and other finance-related climate change cases (above, 1.2). Moreover, such analyses will likely have transnational relevance.

A judicial case dealing with the TCFD Recommendations, such as *McVeigh*, is in fact poised to have a transnational significance for at least three reasons. First, instruments relating to financial law often lie on the fringes and in the shadows of courts of law.[155] Bringing to the surface the normative implications of the TCFD Recommendations would offer the opportunity to cast light on many of the assumptions underlying instruments relating to financial law. Second, by analyzing the TCFD Recommendations as they are applied in domestic courts, environmental law scholarship can bring to light many of the regulatory assumptions that have made financial entities largely unaccountable in environmental matters (above, 3.2). In the classic tradeoff between the environment and economic reason, the TCFD portrays how economic reason can at times *depend* on whether business and financial entities take the natural and regulatory environment seriously. From such entities' degree of seriousness in disclosing and accounting for their climate-related risk will in fact depend their performance and the viability of their *economic* activities in the future. Third, each case that debates climate-related

[154] See also Braithwaite (op. cit.), pp. 275 and 282. On misfires, see above, para 4.
[155] Amorello (op. cit.), p. 154.

financial risk will offer some of the tiles to internally reconstruct (in law) the mosaic of what the TCFD Recommendations signify as a piece of self-regulation (among actors of the financial markets, above, 3.1).[156] In courts of law, the workings of legal reasoning are in fact a fine act of balancing. On the one hand, legal reasoning maintains legal stability; on the other hand, it also allows for change, whenever painstaking and logic argumentation can be grounded in established principles and doctrines.[157]

A *complete* mosaic of what the TCFD Recommendations signify, ensuing from the tiles of domestic litigation, is unlikely: each domestic court is moored in its legal culture, and courts' legal reasoning over the same transnational instrument—the TCFD Recommendations in this case—promises no complete legal toolkit to deal with climate-related financial risk in the future. But this does not need to be a problem. If one adopts a normative pluralist view, the lack of composition and established coherence over how to interpret the TCFD Recommendations is accepted. Regulation, be it by judges or other public authorities, is no magical wand in any field: it is incremental and perfectable. But discussing regulation, rather than voluntary disclosures, helps comprehend that the market, when functioning correctly, is not the only democratic "determinant of value."[158] In this light, discussing the twists and tweaks of regulation, as incremental and perfectable as it can be, proves crucial to understanding how legal norms can bridge the social and scientific rationality of risks, especially when questions of risk are inherently questions of equality and justice, as sociologist Ulrich Beck avouched several years ago.[159]

Within questions of risk, the *management* of risk carries most theoretical significance: rather than focusing on the development and employment of technologies, as in the past, our society

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[156] On the need for domestic courts to internally reconstruct sociological realities, see Teubner (op. cit.).
[157] E. Fisher, *Environmental Law: A Very Short Introduction* (OUP 2017), p. 24.
[158] J. Boyd-White, *The Legal Imagination* (The University of Chicago Press 1985, abridged edn), p. xviii.
[159] U. Beck, *Risk Society: Towards a New Modernity* (Sage 1992), pp. 19–20.

is now more concerned with "the political and economic 'management' of the risks of actually or potentially utilized technologies - discovering, administering, acknowledging, avoiding or concealing such hazards with respect to specially defined horizons of relevance."[160] *McVeigh* and the cultural case on climate-related financial risk in pension funds here sketched can at least testify to a possible trajectory: how the promise of security and risk management (through due diligence), rather than sole risk assessment (through disclosures), can be reaffirmed to a critical public through real interventions in our present techno-economic development.[161]

6. CONCLUSIONS

Writing in 2013, John Braithwaite maintained that regulators' powers had not grown in proportion to the sophistication of the financial markets. Such a statement is still accurate. Since then, pension funds have also shown that they cannot fully tackle climate-related financial risks and opportunities within regulatory instruments that merely encourage disclosure, as the TCFD purportedly does. Rather, socio-legal studies have shown that a normative approach can meaningfully lead pension funds to account for their climate-related risks and opportunities. For its part, legal research has elucidated that "[r]egulatory detail matters," and that we can normatively define pension funds differently, in ways that ensure financial and social stability, if we so desire (above, 4–5).[162]

Underscoring how global financial markets cannot be surrogate regulators, this paper focused on the contribution of the judiciary to responsive regulation in climate-related financial risk in pension funds, with some inroads on the complementary role of regulation by public authorities. Moreover, the discussion has also revealed how the work of the TCFD can help

[160] Ibid.
[161] On real or cosmetic interventions in the techno-economic development and the promise of security, see ibid.
[162] B. Black, 'Agents Watching Agents: The Promise of Institutional Investor Voice' (1992) 39 UCLA L Rev 811, p. 815.

bridge the gap between voluntary and normative approaches to pension fund climate-related financial risk. Scope for further research lies in gauging how public and judicial regulation can further complement one another in reigning in and governing the markets' "animal spirits"[163] in pension fund climate-related risks and opportunities. Additional research may also focus on how the TCFD instruments can best harden into binding law, or how courts should adjudicate cases invoking TCFD instruments.

The need for a "regulatory infrastructure,"[164] through judicial or legislative determinations, does not necessarily imply the expansion of public enforcement. Public enforcement itself can in fact be captured by finance capitalism and fail its regulatory aims.[165] Rather, a responsive regulatory infrastructure (above, 5) would allow for the incremental implementation of the TCFD guidelines with respect to both disclosures and due diligence. Such implementation, flexible enough to meaningfully capture an organization's dynamics, would be reviewed by beneficiaries through active information-gathering and engagement in their fund pension funds. Whenever spaces for dialogue between pension funds and beneficiaries run aground, it will ultimately be for courts or regulatory authorities to authenticate pension fund assessments and management of climate-related financial risk.[166]

The rationale for such public enforcement intervention acquires greater heft when considering pension fund duties toward their beneficiaries as well as the systemic risk they can generate for financial and social stability. The process is far from established: in fact, the study and practice of climate-related financial risk has fully come under the spotlight in relation to the TCFD Recommendations only in 2017. Moreover, the incremental construction of a

[163] J.M. Keynes, *The General Theory of Employment, Interest and Money* (Project Gutenberg 2003 (original 1936)).
[164] For this expression, see Braithwaite (op. cit.), p. 275.
[165] Ibid.
[166] This may also be one of the ways to flesh out what John Braithwaite calls 'radical privatization' of enforcement to check on public enforcement, ibid.

responsive regulatory infrastructure is expected to be intrinsically complex and evidence-intense due to the sophistication and ever-changing nature of financial rocket science.[167] But the complexity of present and future litigation against pension funds shall not discourage legal scholars and practitioners. Courts have increasingly engaged with evidence-based judicial rulings and can generally rely on expert opinions to charter the adapted role of law in the new field of climate risk.[168]

McVeigh, the first case on disclosures and due diligence that a beneficiary has brought against their public pension fund, appears to test the waters for a responsive regulatory infrastructure in climate risk matters by engaging Australia's Federal Court. The case can ultimately spark the long-needed dialogue between pension funds and beneficiaries, thus opening "spaces for ethical deliberation" on why and how we shall regulate pension fund climate risk.[169]

[167] Ibid, pp. 275–276.
[168] On the evidence-based judicial process, see A. Alemanno, 'The Emergence of the Evidence-Based Judicial Reflex: A Response to Bar-Siman-Tov's Semiprocedural Review' (2013) 1 The Theory and Practice of Legislation 327.
[169] On 'spaces for ethical deliberation,' see Braithwaite (op. cit.), p. 278.