

The Law, Policy, and Economics of Climate-related Financial Disclosures

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February 2024



Acknowledgements

We are grateful for financial support for this investigation from Toka Tū Ake – EQC and the Resilience National Science Challenge.

Executive Summary

In Aotearoa New Zealand, businesses, and particularly financial companies, are increasingly exposed to climate change risks. These companies also increasingly face the need to report these risks. The legislation on Climate-related Financial Disclosures (CFD), forcing companies above a certain size to report their risks, is one important step in this direction. The CFD started mandating disclosures in 2023.

CFD requirements, coupled with climate-related hazards, may lead to various nuanced consequences, and have various implications for the behaviour of financial firms. This project applied a multidisciplinary (economic-legal-policy) perspective to investigate these implications.

Given the delays in implementation of the reporting requirements, it is not yet possible to empirically investigate the realised consequences of these mandated reporting requirements. Therefore, this project focused on improving the legal obligations that were detailed in the design of these reporting requirements, and, in the first instance, on the consequences of disclosing such risks voluntarily.

As such, the first theme was pursued through an analysis of the existing insights about the legal facets of disclosures and culminated in legal submissions that called for increased transparency, readability, and clarity about the meaning of these disclosures, their detailed contents, and their comparabilities. The second theme focused on the relationship between voluntary disclosures and environmental policies pursued by the disclosing companies, and identified the credibility of these disclosures as a factor that is key to understanding the nuances of the decision to report. As such, credibility is also an important facet of any mandatory regime, thus providing additional justification for an increased demand for transparency, readability, and clarity in the new mandatory regime.

Technical Abstract

The Climate-related Financial Disclosures (CFD) were implemented in 2023, a year which also involved unusually severe – indeed unprecedented, weather-related hazards. This project applied a multidisciplinary (economic-legal-policy) perspective to investigate the implications of these disclosure mandates. Given the delays in implementation of the reporting requirements, it is still not possible to empirically investigate the realised consequences of these mandated reporting requirements in the economic context of Aotearoa. Therefore, this project focused on improving the legal obligations that are detailed in the design of these reporting requirements, and, in the first instance, on the consequences of disclosing such risks voluntarily.

The first theme was concluded with a series of called for actions to increase transparency, quantifiable readability, agreed-scenarios analysis, and clarity about the meaning of these disclosures, their detailed contents, and their comparabilities. The second theme focused on the relationship between voluntary disclosures, their credibility, and the environmental policies pursued by the disclosing companies. It specifically focused on voluntary climate-related disclosures of Scope 1 greenhouse gas emissions. Using econometric/statistical analysis, it examined the connections between the decisions to disclose and environmentally motivated innovation ('green patents').

The legal part of this project concluded the following: (1) It is imperative that the intended audience of these disclosures include stakeholders, customers, taxpayers, consumer organisations, etc., as "primary users". (2) The disclosure procedures require efforts to proactively seek consumers' inputs. (3) Guidelines for disclosures should supplement the "fair presentation" standard with more concrete and specific rules to provide further guidance, clarity, and certainty to these disclosures. These guidelines should include specific understandability measures and readability tests suitable to the public or "the reasonable person". (4) The regulatory authorities should adopt a standardised template or disclosure structure that all reporting entities will be required to follow, to enable machine-readability and comparability of disclosures across different entities within specific sectors. (5) Reporting entities should report their risks against specific mandatory climate scenarios. (6) The scheme should define specific and clear checkpoints to re-visit the framework periodically.

The analysis of voluntary existing disclosures concluded, by exploiting the US Supreme Court's ruling in the eBay vs. MercExchange case, that green innovation enhances the credibility of climate disclosures, thereby leading to more frequent disclosures. Furthermore, entities that are thus innovating enhance the benefits they gain from disclosure via a reduced cost of capital. This credibility-enhancing effect of innovation is more pronounced for entities with less reputational capital. This finding is important within the overall discussion and debate about the benefits and costs of mandatory disclosure requirements, and further justifies the call for increased transparency, regularity, and clarity in these disclosures.

Keywords

Extreme Weather, Multi-Hazard, Governance and Economics, Climate Change, Financial Disclosures, Green Innovation

Introduction

Transparency systems and disclosures enjoy high popularity among policymakers and academics (Ben-Shahar & Schneider, 2014). Requiring firms to report on risks as means to advance transparency and efficiency seems to many as a light-handed intervention, but others consider it an unnecessary and inefficient financial burden that is placed on profitable and productive firms and is thus damaging to economic prosperity.

Theoretically, such reporting requirements have a strong potential to inform market players, bridge information gaps, and advance a more efficient full-information equilibrium. Nonetheless, we hypothesise that mandating reporting on climate-related escalating risks can lead to unintended positive and/or negative consequences. For the insurance sector, for example, such reporting could reduce insurers' willingness to insure properties in hazardous locations. Reporting on risks in hazardous locations will make insuring properties in these locations less desirable as it increases their cost of capital, and potentially also imposes political and reputational costs. Thus, CFD might spotlight risks of which insurers were not fully aware, thus increasing insurance coverage costs of high-risk properties and potentially lead to insurance retreats (Storey and Noy, 2017; Storey et al., 2024). Furthermore, the insured (or shareholders) may seek to avoid insurance firms that insure high-risk properties. As such, the CFD requirements might counter-intuitively trigger dynamics they seek to avert.

The legal component of this research project aimed to identify the building blocks of a disclosure requirement regime that will make adverse outcomes less likely, while also making it a useful tool to reduce the risks that reporting entities are facing from climate change, and to generate a more active policy environment that further emphasizes climate mitigation, adaptation, and prevention.

As the implementation delays in the mandatory regime in Aotearoa accumulated, the economic component of this research shifted to identify the likely determinants and consequences of voluntary disclosure regimes, as data on mandatory ones was and still is not yet available – either in Aotearoa or elsewhere. As such, we aimed to identify currently unconsidered and consequently unquantified benefits of the voluntary regime that mostly determined climate disclosures before mandates began to be entertained by legislatures in recent years.

Indeed, like Aotearoa, the European Union, the United States, the United Kingdom, and many other jurisdictions are only moving now from a voluntary to mandatory regimes. An improved understanding of voluntary regimes can thus help us in the design of mandatory climate-related financial disclosure regimes, the focus of this research project.

Discussion

In response to the challenge posed by climate change, economists, environmentalists, and politicians seek ways to ensure that financial decision-makers consider climate change. In 2015, the international Financial Stability Board established an industry-led task force on climate-related financial disclosure. The task force developed guidelines for voluntary climate-related disclosures to promote informed investments and allow stakeholders to understand reporting entities' exposures to climate-related risks.

Progressing beyond voluntary rules, governments worldwide have started developing initiatives aimed at fighting climate change by adopting new disclosure requirements. These include Brazil, the United Kingdom, Switzerland, Singapore, the United States, the European Union, and New Zealand.

Climate-related risk disclosures compel financial actors to report the impact of climate change on their businesses, including their operations, risks, balance sheets, and future profitability. The request to disclose is based on the rationale that systematic, comparable, and understandable disclosures promote better climate-related decision-making and risk management.

As they proceed to design disclosure regimes, policymakers and other stakeholders should consider several key policy features. They should, for example, define the target audience of these disclosures. New Zealand's proposed disclosure framework targets "primary users," defined as investors, lenders, and other creditors. In other words, the definition of primary users does not encompass employees, customers, or the public. We argued that this definition is too narrow. Targeting a wider audience would increase the impact and relevance of climate-risk disclosures and thus better serve their goals.

A wider audience also better aligns with a modern conception of the firm, which focuses on stakeholders rather than merely shareholders. Unlike shareholders, stakeholders typically look beyond the narrow perspective of the firm's short-term profits. Stakeholders may attend to broader social and community interests and the firm's long-term sustainability. The European Union adopted such a broad perspective in 2019 when it published guidelines on reporting climate-related information. The EU guidelines specify a "double materiality" standard for determining what to report. This standard considers what is material for both shareholders who are the financial audience and stakeholders who are the environmental and social audiences.

Several additional issues were identified in our research as requiring discussion. For example, the dilemma of rules versus standards. While rules are specific and clear—consider, for example, speed limits, deadlines, and age restrictions—standards and principles are more general and ambiguous. Policymakers may be tempted to use standards in designing disclosures, and indeed the New Zealand initiative, for example, makes "fair presentation" the overarching principle of climate-related disclosures. Without making "fair representation" a concrete rule, with associated metrics, firms can abuse such ambiguity and end up complying with the letter of the law while evading its spirit. Another key issue relates to ensuring that disclosures are readable and understandable. Often, disclosures tend to be too complex, difficult to interpret, and thus do not achieve their goals.

To enhance the effectiveness of disclosures further, policymakers should also consider comparability and consistency as key characteristics of a good disclosure regime. Unified and consistent standards help people understand disclosures and make them more effective while reducing reading costs. We recommended that regulatory frameworks adopt a standardized template or disclosure structure that all reporting entities must follow. Furthermore, we suggested that these risk assessments should be based on specific climate scenarios—for example, a pre-specified increase in mean temperature, sea levels, and the extent of the shift in the statistical distribution of high precipitation events—against which all entities must report.

Climate-related disclosures have the potential to prompt the business community to consider more regularly and more deeply the effects of climate change and the risks they entail. Well-designed disclosures will achieve more, and could encourage firms to adopt more climate-friendly strategies and lead a smoother transition to a resilient and sustainable economy.

The transition towards a low-carbon economy introduces risks arising from the uncertainties surrounding future carbon prices, which are determined by future climate policies and the trajectory of the climate system. The emergence of these transition risks has led to a growing demand from investors and stakeholders for more information about firms' exposure to these risks. However, despite their significance, voluntary climate disclosures are often perceived as non-credible, primarily due to the absence of clear and transparent reporting standards and a lack of verification processes (Christensen et al., 2021). All are dimensions that we identified as crucial components of any mandatory system. For example, studies show that the manipulation of climate disclosures occurs through cherry-picking of reported items or by obfuscating facts with ambiguous language and ill-defined terminology (Bingler et al., 2022).

These concerns were echoed by regulators, and led to several supervisory entities, such as the Aotearoa's XRB or the United States' SEC, to propose mandating disclosures so as to provide investors with reliable climate risk information that adheres to clear reporting guidelines. These concerns about the credibility of disclosures are often cited as a factor that reduces the benefits of voluntary climate disclosures as they accrue to the reporting entities. Such benefits could be, for example, a lower cost of capital. This diminished benefit, coupled with substantial preparation and proprietary costs associated with these disclosures, may thus deter firms from disclosing, and can also create powerful lobby groups advocating against disclosures. Winden (2022) shows that disclosing climate risk in full compliance would incur a direct cost of \$6.37 billion per year for all public firms listed in the United States, which is more than double all existing regulatory cost for firms. Surprisingly, however, this appears to be at odds with what we observe, as there has been a marked increase in the number of public firms that choose to voluntarily pursue climate disclosures. These observations suggest that investors might find other ways to assess the credibility of a reporting entity's climate disclosures. There little is known in the literature about what these factors might be.

We proposed that green innovation—defined as technological development that improves fossil fuel efficiency or advances renewable energies and measured with patents— is one such factor. We explore whether and how green innovation affects the propensity to voluntarily disclose climate risks. We hypothesized that green innovation significantly enhances the credibility of climate disclosures. Increasing innovation increases credibility which, in turn, amplifies the benefits of disclosure, thereby incentivizing reporting entities to issue climate disclosures more frequently.

Why does green innovation have the potential to enhance the credibility of climate disclosures? First, green innovation provides a credible signal of a firm's commitment toward the environment. Additionally, the outcomes of such innovation, usually patents, are observable by investors and less likely to be manipulated. Taken together, green innovation represents a costly and transparent signal that helps investors assess the credibility of a company's commitment to the environment.

Second, green innovation makes carbon emission reduction less costly, thereby diminishing the incentives for misreporting emission figures. Reducing carbon emissions is potentially expensive, and when such reductions can significantly impair earnings, that can incentivize misreporting. The tendency to misreport is exacerbated in the current climate disclosure environment, which is characterized by few penalties for misreporting (Greenstone et al., 2023). By enabling firms to reduce emissions without significantly compromising financial profitability, green innovation lessens the incentives for misreporting, thereby enhancing disclosure credibility.

Empirically isolating the causal effect of green innovation on climate disclosure is challenging, however. Confounding variables, such as shareholder preferences, may also influence a firm's technological progress and its decision to disclose. To address endogeneity concerns, we exploit the exogenous shock provided by the 2006 Supreme Court decision in "eBay v. MercExchange" and its impact on the innovation activities of US based firms. Before this decision, it was a standard practice for US courts to automatically issue injunctions after patent infringements were found. Such injunctions force the infringing company to suspend sales of any product related to the infringed technology, regardless of the infringement's scale. These automatic injunctions give existing patent holders considerable bargaining power in licensing negotiation and substantially increases the litigation costs for innovative firms, thus harming innovation. The ruling in 2006 suspended the long-standing practice of automatic injunction, and thus strengthened the incentives for innovation.

Our strategy for identifying the causal impact of innovation on disclosures therefore employs an instrumental variable approach with the eBay ruling as an instrument for a firm's green innovation activities. We used patent litigation data retrieved from the US Patent and Trademark Office to calculate the litigation probability in each green technology class before the ruling. Then, we aggregate the probability across all relevant green technology classes where the firm operates, weighted by the proportion of the firm's green patents in each class.

We found that firms with more green innovation exhibit a higher propensity to voluntarily disclose climate risk. Further analyses indicated that the observed relationship is not driven by a few industries with salient patent litigation risk or by enhanced environmental performance resulting from green innovation. We further showed that the credibility-enhancing effect of green innovation is more important for firms with less reputational capital. We show this by using the involvement in financial misconduct investigation as a measure of reputation loss as in Amiram et al. (2018).

In addition to the above, a more credible disclosure is found to be associated with a lower cost of capital. The presence of green innovation reduces the cost of equity capital conditional on climate disclosure decisions and the reported carbon emissions quantity, consistent with green innovation enhancing disclosure credibility.

It is important to note that this research contributes to the growing literature on voluntary climate-related disclosures and their determinants and focused on disclosure credibility. The credibility of voluntary climate-related disclosure is different from voluntary financial disclosures (where there is an established body of practice and legal rulings about what is credible) and mandatory climate-related disclosures (where, in principle, there should be clear and transparent guidelines that will also obviate the need to discern credibility). But, as we note in the first part of the project, it is not inevitable that mandatory guidelines will indeed provide this credible certainty.

Indeed, proponents for mandating climate-related disclosures argue that voluntary disclosures are discretionary and lack reliability, hindering investors' ability to assess climate risk (Griffin and Jaffe, 2022). In contrast, opponents argue that voluntary disclosures are adequate for investors (Jennings, 2022). Our findings bridge the evidence from these differing perspectives, indicating that while climate disclosures might be subject to manipulation, investors can use alternative information sources, such as green innovation, to assess the credibility of climate disclosures.

Conclusions

The economic part of our project focused on voluntary disclosures, and the concern about their credibility and its implications. By focusing on credibility, we highlight a weakness of a voluntary climate-related disclosure regime. An obvious solution to that is mandating disclosures, but only if these mandates involve a clear set of instructions, regulations, rules, and recommendations about the way these disclosures should be reported.

We concluded that the mandatory disclosure regime, that was implemented in Aotearoa in 2023, should additionally include the following components: (1) It is imperative that the intended audience of these disclosures include stakeholders, customers, taxpayers, consumer organisations, etc., as “primary users”. (2) The disclosure procedures for firms require efforts to proactively seek consumers’ inputs. (3) Guidelines for disclosures should supplement the “fair presentation” standard with more concrete and specific rules to provide further guidance, clarity, and certainty to these disclosures. These guidelines should include specific understandability measures and readability tests suitable to the public or “the reasonable person”. (4) The regulatory authorities should adopt a standardised template or disclosure structure that all reporting entities will be required to follow, to enable comparability of disclosures across different entities within specific sectors. (5) Reporting entities should report their risks against specific mandatory climate scenarios. (6) The scheme should define specific and clear checkpoints to re-visit the framework periodically.

Future Work

Now that a mandatory regime has been implemented in Aotearoa, starting in 2023, it is obvious that ultimately one needs to examine the functioning of this regime. We anticipate that by 2025, we will have access to enough data from the roughly 200 entities that have been required to report on their climate-related financial risks since 2023 to enable us to examine how effective this mandatory regime is, and what are its intended and un-intended consequences to the functioning of these sectoral markets, particularly focusing on insurance, where the impacts of these disclosures may be the most significant.

Publications and Communications

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