The Impact of Climate-Related Reporting on the Financial Performance of Aotearoa New Zealand Companies

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Abstract

Effective 1 January 2023, Aotearoa New Zealand has implemented mandatory climate-related reporting requirements, aligning with global developments in climate-change regulatory frameworks. Changing from voluntary reporting to mandatory reporting may incur financial consequences for Aotearoa businesses. Therefore, this study aims to analyse the impact of climate-related reporting requirements on the financial performance of Aotearoa businesses during the voluntary reporting period and post-implementation periods of mandatory reporting. Twenty-six listed companies were selected for the study as sample companies based on the regulatory guidelines of the New Zealand External Reporting Board (XRB). By reviewing five years of annual reports of sample companies, return on equity (ROE) and return on assets (ROA) data was collected as financial performance measures. For the same period, the climate reporting score was measured based on the climate reporting checklist published by KPMG New Zealand. Two regression analyses were conducted using the panel data collected to achieve research objectives. The analysis provided mixed results. Only one element of climate-related reporting, metrics and targets, has a significant positive impact on ROA. All other climate reporting variables, such as governance, risk management, consistency and comparatives, have no significant relationship with either ROE or ROA in both the voluntary reporting period and the post-implementation periods of mandatory reporting. The study provides recent evidence from Aotearoa on the impact of climate reporting on company performance, comparing pre- and post-mandatory periods.

Keywords

Climate-related reporting
Aotearoa New Zealand
Financial performance

1. Introduction

The cumulative impact of extreme climate events presents a serious threat to economic development globally, with losses of USD 143 billion annually and projected to hit USD 178 trillion by 2070 if no measures are implemented (Dietz et al., 2016; Sari, 2024). However, increasing efforts towards developing a net-zero economy could reduce the losses to USD 43 trillion. To recognise this opportunity, governments around the world are passing on regulatory frameworks to respond to the effects of climate change. Leading countries, such as the United Kingdom, Japan, Switzerland and Singapore, have imposed climate-related reporting requirements (Jones et al., 2023). Aotearoa has become one of the world's first countries to transform its voluntary reporting to mandatory climate-related reporting within financial reports, effective from 1 January 2023, for large publicly listed companies. Insurers, banks, non-bank deposit takers and investment managers support Aotearoa's overall ambition to reach net-zero emissions by 2050 (Bui et al., 2021; Lindsay, 2023).

The transition from voluntary to mandatory climate reporting imposes cost implications for businesses in the short and long term (Kowsana & Muraleethran, 2021). Given the economic significance of big companies, regulatory requirements must be balanced with financial feasibility by business executives, investors and policymakers. It is in the interest of not just the businesses that have to do so but also the wider business community in Aotearoa to understand the impact of climate reporting on financial performance.

The mandatory climate reporting regime applies to major financial institutions, including banks, insurance providers, fund managers, and listed companies with a market standardisation of more than $60 million (External Reporting Board, 2024). To support this transition, Aotearoa introduced the Aotearoa New Zealand Climate Standards, which aim to encourage consideration of climate risks in business, investment, lending and insurance activities, to improve transparency and accountability of reporting entities, and transition towards a low-emission, sustainable economy based on well-informed investment choices (Ministry of Business, Innovation and Employment, 2023). Additionally, this policy development, led by the External Reporting Board, reflects growing national recognition of climate risk as a financial risk. Furthermore, the Financial Markets Authority (2022) identifies growing expectations of decision-useful, high-quality climate reporting by key sectors. These developments highlight the necessity to examine the effect of climate-related disclosures on firm financial performance in the unique regulatory and environmental context of Aotearoa.

Historically, Aotearoa firms have adhered to global patterns in reporting about environmental, social and governance (ESG) measures and corporate social responsibility (CSR), according to voluntary sustainability reporting guidelines (Hsiao et al., 2022). Firstly, previous studies examining the impact of sustainability reporting on accounting performance were restricted to voluntary reporting information. At the same time, climate-related disclosure was not mandated, which limited comparability between companies' performance and identifying the real impact before and after mandatory reporting regimes (Umar et al., 2021; Carvajal & Nadeem, 2022). Secondly, the research lacked sector-level analysis, particularly in key industries such as the financial, industrial and materials sectors. Thirdly, while some of the research analysed ESG disclosure in financial organisations (Yu, 2023), little effort was made to examine the impact of climate-related reporting on specific industries within Aotearoa.

In summary, despite Aotearoa's reporting requirement for climate-related matters, its impact on the financial performance of companies remains unknown. Though the rules aim to enhance transparency and ensure more sustainable business, there is a lack of empirical evidence to indi-

cate whether they lead to improved financial performance. This study examines the relationship between financial performance and climate reporting.

This study was conducted to answer two major research questions, as follows:

1. What is the impact of climate-related reporting on the financial performance of Aotearoa businesses?
2. Is there any significant financial-performance change in the mandatory reporting period compared to the voluntary climate-related reporting period?

Understanding climate-related reporting is essential to business managers, investors, policymakers and government institutions (Atasel et al., 2020). Through the analysis of climate disclosures and financial performance, this study provides insights into market opinions regarding climate reporting, its influence on investment choices, and its influence on business value. The implications could lead investors to focus on green companies, ultimately making sustainability a strategic corporate imperative. Further, Aotearoa's move towards mandatory climate reporting has required a fundamental overhaul of the corporate reporting systems (Dey et al., 2023). Our study offers empirical evidence on how companies have reacted to the new mandates regarding financial performance and firm conduct. The findings of this study can help regulators evaluate the effectiveness of current mandatory climate reporting requirements.

The examination of the relationship between climate disclosures and financial performance provides insight into whether such regulations are attaining their respective goals. This, in effect, can inform policy making and consideration in the future, and highlights any further reform or adjustment that may be needed to improve reporting quality, consistency and relevance.

Considering increasing international attention to climate risks, studies in this field are highly pertinent. While there is limited Aotearoa literature on climate reporting in the financial, industrial and materials sectors, this study contributes to the emerging body of literature by providing sector-level results and issuing a call for more research into the integration of climate reporting with sustainable business practices.

The paper is organised as follows: In section two, the literature review describes international climate reporting history and Aotearoa's progress in climate reporting, followed by methodology, with the study design, data collection and analysis strategy in section three. The results and discussion in section four present analytical findings, and finally, the conclusion summarises key findings, study limitations and potential future research avenues.

2. Literature Review

2.1 Evolution of global climate-related reporting and the Aotearoa context

Climate reporting has roots in mid-20th-century CSR concepts and has grown significantly over the past 40 years (Helmold et al., 2022; Maroun, 2020). In the 1990s, the Global Reporting Initiative standardised environmental reporting, and more recent efforts have been the European Union's Nonfinancial Reporting Directive and United Nations Sustainable Development Goals (Dinu et al., 2023; Ferranti, 2018; Rimmel, 2020).

Projections of 1.0°C–1.5°C by the year 2050 for global warming may be conservative, with the existing trend in carbon emissions suggesting such levels could be achieved by 2033 or 2035 (Diffenbaugh & Barnes, 2022). Aotearoa, economically vulnerable to climate change due to its agriculture-driven economy, has committed to reducing greenhouse gas (GHG) emissions by 30% by 2030 and achieving net-zero emissions by 2050 through the COP21 Paris Agreement (Kimura et

al., 2023). To realise these goals, the government is launching strict climate reporting requirements, and businesses, particularly in agriculture, are adopting technologies to reduce environmental impacts (Lawrence et al., 2022). However, Aotearoa's per capita GHG emissions rank among the highest globally, as a result of its agriculture and animal production industries (Campbell-Hunt et al., 2015). Aotearoa's Emissions Trading Scheme (ETS), introduced in 2008, has also come under criticism as not leaving sufficient room for low-carbon behaviour change and investments, and for diluting Aotearoa's role as a responsible climate-governing country of the world (Campbell-Hunt et al., 2015; Wang, 2019).

With global pressure and COP21 interactions, Aotearoa and fellow members of the Asia–Pacific region are aligning business processes with climate regulations. Companies include climate adaptation strategies in financial reporting to transparently communicate climate risk and financial performance information to stakeholders (Abhayawansa & Adams, 2022). However, climate-related reporting so far is occasionally inconsistent, and there is poor integration of climate-related risks into financial reports, together with minimal cross-referencing between non-financial and financial reports (Рожнова & Efimova, 2020). This highlights the need for standardisation of climate-risk disclosures to better reflect the interconnectivity of climate change and business opportunities.

Early voluntary reporting was non-standardised, and comparability was difficult (Simon & Mkumbuzi, 2024). Across the globe, the shift to mandatory climate reporting is on the rise due to the lack of standardisation in voluntary practices. Thus, governments and stock exchanges are increasingly demanding green reporting to address environmental concerns (Chen et al., 2024). Aotearoa has also acted, being one of the earliest countries to establish mandatory climate reporting requirements, which commenced on 1 January 2023. This move mirrors the growing importance of transparent, consistent reporting in addressing climate challenges and aligning financial and non-financial disclosures, where the impact on the company's performance is yet to be discovered.

2.2 Financial consequences of adapting to climate-change reporting

2.2.1. Findings with a positive relationship

Sustainability reporting has evolved a lot, and there have been numerous studies all over the world on the connection between CSR, ESG, sustainability and climate-change reporting (Drempetic et al., 2020). Empirical studies consistently indicate a positive relationship between reporting practices and financial performance, with companies adopting strong, transparent reporting tending to deliver improved financial outcomes (Evans & Peiris, 2010). Climate-change adaptation comes at a cost, either in terms of capital investment or periodic maintenance, to the profitability of an enterprise. Financial performance, a key indicator of business effectiveness, is measured using ratios such as return on equity (ROE) and return on assets (ROA) (Venanzi, 2012).

ESG reporting, focusing on environmental, social and governance practices, is another critical factor, as is an earlier generation of climate reporting. Companies with improved ESG ratings and clear reporting have a greater tendency to achieve improved financial performance (Raghavan, 2022). Pioneering research by Eccles et al. (2014) tracked US firms over 18 years and found that the companies that integrated ESG factors into their strategies outperformed comparable firms in both stock market returns and profitability. These firms demonstrated enhanced risk-management and resilience against market volatility. An extensive survey by Friede et al. (2015) of over 2200 studies revealed that nearly 90% of them found a favorable or neutral relationship between profitability and ESG reporting. Clark et al. (2015) found that 88% of firms with strong sustainability practices achieved positive operating results, and 80% achieved long-term financial success. Margolis and Walsh (2003) also noted a statistically significant positive relationship between sus-

tainability reporting and financial performance, attributed to enhanced operational effectiveness, innovation and value creation.

As the newest reporting framework, climate-disclosure-related studies reveal that firms that disclose climate information, such as greenhouse gas emissions and energy efficiency, experience lower capital costs and perform better than competitors in market performance (Matsumura et al., 2014; Khan et al., 2022). Also, disclosures of climate threats and opportunities engage investors and contribute to the financial success of entities (Kaklauskaite & Streimikiene, 2024). Transparent climate disclosures are being considered more of a competitive advantage, of value to all stakeholders.

Several studies provide empirical evidence of the positive relationship between environmental disclosure and firm performance. Voluntary disclosures of climate change are positively related to board effectiveness (Ben-Amar & Mcilkenny, 2014) and employee stock ownership (Abdelnour et al., 2023), suggesting that improved governance structures result in increased transparency. Additionally, mandatory and voluntary disclosures on the environment have a positive relationship with financial performance in heavy-polluting Chinese companies (Wu & Li, 2022). A study of US-listed companies provides evidence of a positive link between ESG performance and quality of financial disclosure (Ferdous et al., 2024). In addition, voluntary disclosure indexes are positively associated with proxies for firm performance (Hamrouni et al., 2015), and greater disclosure rankings are associated with improved stock returns, firm value and subsequent financial performance measures (Jiao, 2011).

Generally, although some studies show a positive relationship between climate reporting disclosures and firm performance, the evidence is not entirely consistent. Factors such as board performance, employee ownership and local economic growth can influence this relationship (Abdelnour et al., 2023; Ben-Amar & Mcilkenny, 2014; Wu & Li, 2022). The differing results establish the nature of the issue and the need to continue conducting studies to fully grasp the dynamic between climate disclosure and firm performance in different industries and geographical areas.

Overall, the literature reflects a strong positive relationship between financial performance and every form of green reporting, including CSR, ESG, sustainability reporting and climate reporting. The practices enhance market and operating performance, leading firms to adopt holistic and transparent reporting methods.

2.2.2. Findings with a negative relationship

While the majority of studies find a positive relationship between financial performance and CSR, ESG, sustainability reporting and climate reporting, others find a negative relationship, primarily due to the cost of implementing sustainability programmes (Buallay et al., 2021). For instance, CSR activities may divert resources from core business operations, increasing costs and reducing profitability.

ESG reporting, while much praised, is also criticised for its cost. Duque-Grisales and Aguilera-Caracuel (2019) contend that the expenses associated with conducting ESG activities, including the deployment of green technologies and enhancing employee working conditions, can put financial performance under stress, particularly in the short term. Wang et al. (2016) also indicate that excessive costs of ESG compliance may lead to suboptimal financial performance and lower market returns, because companies are not able to balance profitability and ESG goals.

Sustainability initiatives, though positive in the long term, tend to require heavy initial technology investment and change in operations, which negatively affect short-term financial performance (Nugrahani & Artanto, 2022). Jacobs et al. (2010) found that companies with lofty goals of sustainability normally experience short-run financial losses due to the expenses incurred.

Similarly, Lioui and Sharma (2012) also assert that excessive investment in sustainability initiatives may result in reduced share prices, due to the fact that investors may perceive these as a diversion of resources from profit-generating activities.

Climate reporting also brings with it the financial challenge that companies must spend considerable amounts to address climate risk-management and emission reduction. Kartadjumena and Rodgers observe that investments are made to deliver long-term social non-monetary outcomes rather than immediate monetary return (2019). Griffin and Sun (2013) found that companies that disclose climate-related risks underperform within the market, as investors view them as risky, particularly in carbon-intensive activities that require a lot of emissions-management investment.

In summary, the negative link between green reporting and financial performance is primarily sustained by the very high expenses in embracing sustainability culture, particularly in the short term. Those expenses can cause decreased profitability as well as investors' demand for their shares, even though greater profits may arise in the future than short-run financial hardships.

2.2.3. Findings with no relationship

Different studies have examined the relationship between financial performance and green reporting – i.e., CSR, ESG, sustainability and climate-change reporting – and found that there is no specific positive or negative relationship (Buallay et al., 2021). The studies show that while green reporting is more prominent in modern business, its impact on financial performance is neutral.

ESG reporting has also shown a neutral relationship with financial performance. Almeyda et al. (2006) also argue that the impact of ESG reporting varies by industry, whereas upfront costs can offset anticipated long-term benefits. Margolis and Walsh (2003) reviewed 127 studies and found weak or no correlation, attributing this to the long-term period of sustainability returns. Nelling and Webb (2009) agree, noting that sustainability reporting enhances reputation and stakeholder confidence but has no significant short- or medium-term financial impacts. Also, a study conducted in Australia reported no material correlation or significant association between environmental performance and the extent of environmental disclosure (Sutantoputra et al., 2012). This suggests that the relationship between climate reporting and firm performance is not consistent across markets and settings.

Climate reporting, or carbon emissions and climate risk-management as a topic, also does not exhibit a material connection with profitability in some cases. Munjal and Sharma (2019) found no direct relationship in the Indian public banking sector, because climate-risk reporting works more out of compliance than driving profitability. Murray et al. (2006) state that expenditure on climate risk-management pays long-term benefits and, therefore, there is no net effect on finance.

In short, while green reporting improves reputation and stakeholder trust, its economic effect is commonly neutral, as short-term expenses counterbalance long-term gains. Industry-specific, regulatory and long-term implications of sustainability and climate actions impact this neutrality.

According to the literature analysis, different outcomes have been reported on the relationship between various forms of green reporting and the financial performance of businesses. Much literature highlights long-term positive outcomes. Thus, we developed the hypothesis that there is a positive association between financial performance and the extent of ESG disclosures, whereas some other researchers argue for a negative relationship in the short term. There were instances of reported neutral relations, which balanced out the long-term benefits with immediate cost-sustainability initiatives.

2.3. Findings on post-regulation-period impact

Regulatory shifts such as CSR, ESG, sustainability reporting and climate-related reporting have transformed from voluntary to mandatory. In India, the Companies Act 2013 mandates that businesses meet specific financial thresholds to spend 2% of their net income on CSR (Sharma & Aggarwal, 2022). Similarly, the EU's Non-Financial Reporting Directive (NFRD) in 2014 required large companies to report on environmental and social policies. Companies that strategically integrated NFRD requirements saw improved financial performance, risk management and stakeholder relationships, while those treating them as mere compliance did not (Hummel & Schlick, 2016).

The EU's Sustainable Finance Disclosure Regulation (SFDR) in 2019 impacted financial markets by differentiating compliant investment funds, attracting investor attention, though not all firms experienced positive financial outcomes (Birindelli et al., 2023). The Corporate Sustainability Reporting Directive (CSRD) in 2021 further standardised sustainability disclosures, leading to operational efficiencies and increased investor interest in compliant firms (KPMG, 2020).

Similarly, climate-related reporting also evolved with the Task Force on Climate-Related Financial Disclosures (TCFD) framework in 2015, shifting from inconsistent voluntary disclosures to standardised reporting. Post-TCFD, firms in the Indian energy sector demonstrated improved financial performance linked to climate disclosures (Maji & Kalita, 2022).

In conclusion, the financial impact of green reporting regulations provides mixed results and varies by industry, adaptation costs and strategic integration. Firms aligning regulations with long-term goals often achieve better financial outcomes, while those treating compliance as a standalone requirement may not see significant benefits (Eccles & Krzus, 2017).

3. Methodology

3.1. Variable measurements, sample and data collection

Data related to measuring the financial performance of businesses and climate reporting is collected from all financial and investment companies listed in the financial sector as of 5 August 2024, as well as companies with a market capitalisation exceeding $60 million and listed in the industrial, materials and energy sectors of the NZXS mainboard of the New Zealand Stock Exchange (NZX) as of 5 August 2024. A total of 26 listed companies, including all nine financial sector companies, were considered as sample companies. These entities that are required by the climate-related disclosures legislation to produce climate statements are known as climate reporting entities (CREs) (External Reporting Board, 2024). Apart from the financial sector, other companies in the sample were involved in aviation, manufacturing, transport, energy supply, freight handling and material supply. Therefore, the sample selected appropriately represents Aotearoa businesses that actively contribute to the economy.

According to the climate standard published by the External Report Board of New Zealand, entities should adhere to numerous climate-reporting requirements, which can be categorised as governance, strategy, risk management, metrics and targets, consistency comparatives, and others (KPMG, 2023). Using KPMG's *Climate disclosures checklist*, a criteria-based (governance, strategy, risk management, metrics and targets, consistency comparatives, and others) scoring system was used to measure the level of climate reporting in businesses (KPMG, 2023). Climate disclosure scores were analysed using a content analysis framework based on the KPMG (2023) ESG reporting framework. A 5-point Likert scale was used, where:

1 = no disclosure
2 = minimal disclosure (general statements)
3 = moderate disclosure (some quantitative information or specific reference)
4 = detailed disclosure (metrics, targets and performance)
5 = integrated disclosure (strategy, governance, metrics and assurance)

Annual reports and sustainability reports of companies for the five-year period from 2018 to 2024 were read. Two independent researchers performed the exercise of coding. After initial scoring, the discrepancies were debated and solved. Inter-coder reliability was assessed, and an agreement was achieved, indicating high agreement in the scoring. The process helps to mitigate subjectivity and improve the robustness of the analysis, and enhances the measurability of research content and the reliability of the research outcome by reducing bias (Adeleke et al., 2024). The level of adherence to climate reporting requirements was measured collectively for all categories as one independent variable and each category individually as more independent variables, making a total of seven independent variables. However, due to the requirement of consistent application for several companies' annual report evaluation, the KPMG checklist (KPMG, 2023) was simplified with very specific and important information in climate reporting (see Appendix 1).

In this research, financial performance information such as return on equity (ROE) and return on assets (ROA) was used to measure business performance. ROE shows profit generation from shareholders' equity, while ROA reflects asset utilisation efficiency, indicating better asset management, making it a critical comparative measure (Chakkravarthy et al., 2024; Panigrahi & Vachhani, 2021). Both ratios offer insights into profitability and operational effectiveness. The ultimate sample consisted of 26 publicly traded companies in Aotearoa that made climate-related disclosures continuously over the five years to 2024. Financial performance indicators (ROE and ROA) and climate disclosure scores were obtained from annual reports, sustainability reports and publicly available ESG databases such as Refinitiv Eikon. In total, the dataset consisted of 130 firm-year observations (26 companies × 5 years). As of September 2024, annual reports for 2023/24 had been published by some companies, while others had only published reports up to 2022/23. Where necessary, the most recent five years of data available for each company were utilised to give consistency to the panel.

For a deeper understanding of the variables and related data, including the sources that were collected, these are summarised in Table 1.

Table 1. Variable definition and measurement.

Variable type	Variable name	Code	Definition/ Explanation	Data source	Reference
Independent variables	Governance	GOV	Under the governance section of climate reporting, businesses must disclose how the board and management have structured themselves to oversee climate-related issues. This includes how roles and responsibilities are assigned to manage climate risk and opportunities. The simplest way of handling this is by appointing a committee to oversee climate-related risks and opportunities. Accordingly, seven sub-disclosure elements were evaluated under this section.	Annual reports of sample companies were the key data sources. Additionally, the NZX website was also used.	KPMG, 2023.
	Strategy	STR	This disclosure requires businesses to explain their climate-related risks and opportunities and how they are adopted into the overall strategic-planning process of the business. Moreover, how management assesses potential climate impacts and how to adopt and mitigate the impact through scenario analysis needs to be disclosed. Accordingly, six sub-disclosure elements were evaluated under this section.		
	Risk management	RSK	Under this disclosure, businesses need to outline the process of identifying, assessing, and managing climate risks and opportunities. Moreover, organisations are required to disclose short-, medium- and long-term risk assessments and the frequency of revisiting these assessments to update the changes. Accordingly, two sub-disclosure elements were evaluated under this section.		
	Metrics and targets	MNT	Organisations are required to quantify and disclose climate impacts from their business operations, and how business targeting controls and minimises the impact to improve climate performance. Under this, organisations may disclose their level of greenhouse gas emissions, energy consumption, water usage and other applicable factors on climate risk. Moreover, organisations must set clear long- and short-term targets to minimise these impacts. Accordingly, three sub-disclosure elements were evaluated under this section.		
	Consistency and comparatives	CNC	Businesses are required to present climate-related disclosures consistently over the reporting periods. Comparative information should be provided in order to get analytical information. When material changes occur in the current period, comparative information should be presented for the past reporting periods. Accordingly, three sub-disclosure elements were evaluated under this section.		
	Other	OTR	Here, businesses are required to report on methods and assumptions used; any data estimation uncertainties, statements of fair presentation, and compliance need to be disclosed. Accordingly, six sub-disclosure elements were evaluated under this section.		

Variable type	Variable name	Code	Definition/ Explanation	Data source	Reference
	Total climate reporting score	TLS	This is the addition of weighted average scores of all sub-disclosure elements of climate-related reporting. To decide the total climate reporting score, weights were allocated as 30% for governance, 25% for strategy, 10% for risk management, 15% for metrics and targets, 10% for consistency and restatement of comparatives, and 15% for other factors were allocated to decide overall climate score.		
Control variables	Total assets in NZD millions	TAM	This was used as a control variable to manage firm size, which significantly affects the dependent variables. This is a typical numeric measure of a business and its operating capacity. Total asset value was taken in millions from financial position reports of all sample companies at every financial year-end.	Annual report information on sample companies	
	Total assets log	TAL	The natural log value of total asset value at every financial year end was taken as a control variable in order to ensure the control variables were also in a similar value range with dependent and independent variables.		
	Firm age	AGE	Number of years for the business from the initial establishment. However, to ensure consistency, the date listed on NZX was considered as the start date. The number of years from the listing date to every financial year's end date was calculated.		
	Market capitalisation in NZD millions	MCM	This is another control variable that provides an idea of market performance and firm size, which has a significant impact on financial performance. Market capitalisation value was taken in millions from NZX's records at every financial year-end date. When data was not available on the exact closing date, most closed dates were considered before the financial year's end.		
	Market capitalisation log	MCL	The natural log value of market capitalisation at every financial year end was taken as a control variable to ensure the control variables were also in a similar value range with dependent and independent variables.		
	Board size	BDZ	In the governance of climate-related reporting, the board is a critical factor that has a significant impact on non-financial reporting, such as CSR, ESG, sustainability and climate reporting. Every financial year, the actual board size was taken for all sample companies.		
Dependent variable	Return on equity	ROE	This refers to the return earned for equity shareholders by the business. This was calculated by dividing the profit earned by the total equity value in the financial position report every financial year.	Financial reports of sample companies were published in their annual reports.	Nithin, 2023.
	Return on assets	ROA	This refers to the efficiency of the profit generated by businesses from their overall assets base. ROA was calculated by the profit generated before interest and tax divided by the company's total assets in the financial position report at every financial year.		

Source: Authors' own creation.

As mentioned in Table 1, there were a number of different sub-disclosure elements for each independent variable (GOV, STR, RSK, MNT, CNC, OTR), except for the total climate reporting

score (TLS). The evaluation score was marked for each sub-disclosure element as how much out of the full score of 5 allocated for each sub-disclosure element. By adding all the sub-disclosure element scores, the overall score was stated as a percentage for the particular independent variable (Berg et al., 2022). Appendix 1 shows all evaluation criteria for each independent variable and how climate scores were calculated. Annual reports for each financial year of all sample companies were individually evaluated to get complete climate-score data.

3.2. Data analysis techniques

Our study involved panel data for different entities, different time periods and different industries. Therefore, for a better understanding of the data and trends, descriptive analyses were conducted under three categories as follows.

- Descriptive statistics for all variables: Under this, descriptive statistics were run for all the variables as a pool of data without factoring in entity, industry or period (financial year).
- Descriptive statistics for industry-wise: Financial performance data and climate reporting data may have industry-specific trends and characteristics. Therefore, analysing descriptive statistics for all the variables by factoring in the industry can provide valuable insights into such industry-specific trends and characteristics.
- Descriptive statistics for year by year: This analysis was important to identify time trends and characteristics of all variables. More specifically, this analysis might provide valuable insights into the pre- and post- impacts of mandatory climate reporting requirements on financial performance.

In order to find solutions for the two objectives of this research, two different regression analysis methods were used.

Analysis 1 – Climate reporting impact analysis:
This analysis focused on resolving objective one of this study: to understand the impact of climate-related reporting on the financial performance of Aotearoa businesses in the period of 2018–24, a regression analysis was conducted by factoring in the industry and year. Since the total climate reporting score (TLS) was calculated by adding the individual climate scores of all sub-climate reporting variables (GOV, STR, RSK, MNT, CNC, OTR), TLS was multicollinear with them. In addition to that, there were two dependent variables (ROE and ROA) that needed to be checked separately for the relationship with the independent variables. Therefore, the following four regression equations were built:

$$ROE = \alpha_0 + \beta_1 GOV + \beta_2 STR + \beta_3 RSK + \beta_4 MNT + \beta_5 CNC + \beta_6 OTR + \beta_7 TAM + \beta_8 TAL + \beta_9 AGE + \beta_{10} MCM + \beta_{11} MCL + \beta_{12} BDZ + \text{factor (Year)} + \text{factor (Industry)} + \epsilon \quad (1)$$

$$ROE = \alpha_0 + \beta_1 TLS + \beta_2 TAM + \beta_3 TAL + \beta_4 AGE + \beta_5 MCM + \beta_6 MCL + \beta_7 BDZ + \text{factor (Year)} + \text{factor (Industry)} + \epsilon \quad (2)$$

$$ROA = \alpha_0 + \beta_1 GOV + \beta_2 STR + \beta_3 RSK + \beta_4 MNT + \beta_5 CNC + \beta_6 OTR + \beta_7 TAM + \beta_8 TAL + \beta_9 AGE + \beta_{10} MCM + \beta_{11} MCL + \beta_{12} BDZ + \text{factor (Year)} + \text{factor (Industry)} + \epsilon \quad (3)$$

$$ROA = \alpha_0 + \beta_1 TLS + \beta_2 TAM + \beta_3 TAL + \beta_4 AGE + \beta_5 MCM + \beta_6 MCL + \beta_7 BDZ + \text{factor (Year)} + \text{factor (Industry)} + \epsilon \quad (4)$$

These four regression equations were used to examine research objective one. In order to perform a more robust analysis of the relationship between climate report requirements and company performance, it is recommended to use regression models controlling for industry and time (Kargin & Alp, 2023). Further, it is important to consider and control other influencing factors on the company's performance, such as company size and age (York, 2018). Therefore, company size (assets value and market capitalisation), company age, and board size were added as control variables. To test multicollinearity among explanatory variables, we computed Pearson correlation coefficients and variance inflation factors (VIFs). As expected, total assets in their absolute values (TAM) and the logarithmic value (TAL) correlated highly ($r > 0.90$). We resolved the redundancy and potential multicollinearity issue by retaining TAL alone in the models. The log-transformed variable is commonly used to adjust for firm size and reduce the impact of skewness of distribution (Gujarati & Porter, 2009).

Analysis 2 – Post-regulation impact analysis:

This analysis examines whether there is any significant financial performance change in businesses in Aotearoa in the post-implementation period of the mandatory climate reporting requirement. Since mandatory climate regulation has been implemented effectively from 1 January 2023, the financial years of 2023 and 2024 are considered as post-implementation periods and other years as pre-implementation periods of the mandatory climate reporting requirement (External Reporting Board, 2024). For the purpose of grouping financial year periods as pre- and post-periods, dummy variables needed to be introduced as pre-periods as zero and post-periods as one (Yulianto & Suryaningrum, 2019). Accordingly, a post-implementation regression analysis was also separately run to determine if the association between climate-related disclosure and financial performance altered after adopting the External Reporting Board's Climate-related Disclosure Framework. This sub-sample consisted of 52 firm-year observations from 26 companies spanning the period of 2023–24. The goal was to isolate the prospective regulatory influence and evaluate the model's robustness in a new disclosure environment.

The following regression models were used to solve objective two of the study. The conceptual model for analysis two is shown in Figure 1. The following regression equations were built to check for changes in financial performance in the post-implementation period of the mandatory climate reporting requirement:

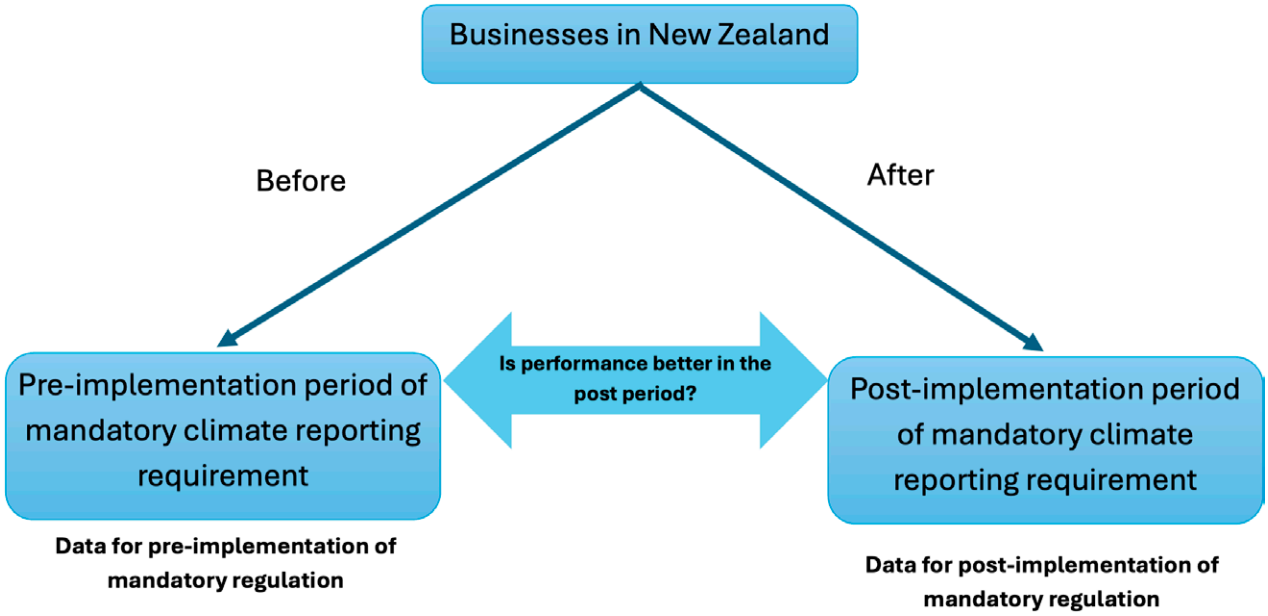
$$ROE = \alpha_0 + \beta_1 Post\_Implementation + \beta_2 GOV + \beta_3 STR + \beta_4 RSK + \beta_5 MNT + \beta_6 CNC + \beta_7 OTR + \beta_8 TAM + \beta_9 TAL + \beta_{10} AGE + \beta_{11} MCM + \beta_{12} MCL + \beta_{13} BDZ + factor\ (Year) + factor\ (Industry) + \epsilon \quad (5)$$

$$ROE = \alpha_0 + \beta_1 Post\_Implementation + \beta_2 TLS + \beta_3 TAM + \beta_4 TAL + \beta_5 AGE + \beta_6 MCM + \beta_7 MCL + \beta_8 BDZ + factor\ (Year) + factor\ (Industry) + \epsilon \quad (6)$$

$$ROA = \alpha_0 + \beta_1 Post\_Implementation + \beta_2 GOV + \beta_3 STR + \beta_4 RSK + \beta_5 MNT + \beta_6 CNC + \beta_7 OTR + \beta_8 TAM + \beta_9 TAL + \beta_{10} AGE + \beta_{11} MCM + \beta_{12} MCL + \beta_{13} BDZ + factor\ (Year) + factor\ (Industry) + \epsilon \quad (7)$$

$$ROA = \alpha_0 + \beta_1 Post\_Implementation + \beta_2 TLS + \beta_3 TAM + \beta_4 TAL + \beta_5 AGE + \beta_6 MCM + \beta_7 MCL + \beta_8 BDZ + factor\ (Year) + factor\ (Industry) + \epsilon \quad (8)$$

Figure 1. Conceptual model for pre- and post-implementation analysis.



Source: Authors' own creation.

4. Analytical Results, Findings and Discussion

4.1. Descriptive analysis

4.1.1. Descriptive statistics: All variables pooled

As Table 2 depicts, the mean ROE of -0.01 suggests minimal losses by firms between 2018 and 2024, while the median ROE of 0.08 suggests low profitability. Contrary to Cahan et al. (2016), who found that strong ESG practices equate to good financial performance, the huge losses by RTO Ltd and other firms in 2020–21 (the worst time of the Covid-19 impact) lowered the mean. The high standard deviation (0.48) indicates extreme variation in ROE. Similarly, the mean ROA is -0.07, and the median is 0.04, indicating that most firms have positive returns, but some extreme losses pull down the mean. The high spread (standard deviation 0.78) and negative skewness (-0.06) confirm mixed financial performance, particularly post-pandemic, as supported by Białkowski and Sławik (2022).

The mean total climate reporting score (TLS) is 0.57, with a median of 0.58, reflecting varied climate reporting. Despite mandatory climate requirements, discrepancies exist (KPMG NZ, 2022). Variations in firm size in terms of total assets and market capitalisation necessitated log transformation for examination. Board sizes range between three and seven, with a mean of seven directors, in accordance with Deloitte NZ (2021), which advocates for board diversity to enable effective ESG governance.

Table 2. Descriptive statistics.

Variable name	Code	Mean	Median	Standard deviation	Min	Max	Skewness
Dependent variables							
Return on equity	ROE	-0.01	0.08	0.48	-4.09	0.73	-5.81
Return on assets	ROA	-0.07	0.04	0.78	-6.06	0.38	-7.06
Independent variables							
Governance	GOV	0.60	0.63	0.18	0.26	0.97	-0.03
Strategy	STR	0.56	0.57	0.18	0.17	0.93	-0.26
Risk management	RSK	0.59	0.60	0.20	0.20	0.90	-0.32
Metrics and targets	MNT	0.52	0.53	0.19	0.07	0.87	-0.40
Consistency and restatement of comparatives	CNC	0.53	0.47	0.18	0.13	0.93	0.07
Other	OTR	0.56	0.57	0.17	0.27	0.87	-0.17
Overall climate reporting score	TLS	0.57	0.58	0.17	0.22	0.91	-0.25
Control variables							
Total assets in NZD millions	TAM	46,922.17	628.01	188,490.27	0.03	1,029,774.00	4.54
Total assets log	TAL	20.43	20.26	3.18	10.18	27.66	-0.55
Entity age	AGE	24.79	23.00	12.49	0.00	61.00	0.83
Market capitalisation in NZD millions	MCM	8,192.60	538.94	22,653.25	1.05	112,724.70	3.29
Market capitalisation log	MCL	20.26	20.11	2.54	13.87	25.45	-0.27
Board size	BDZ	7.04	7.00	1.79	3.00	13.00	0.89

Source: Authors' own creation.

4.1.2. Descriptive statistics industry-wise[1]

Financial performance across sectors is generally varied. Profitability for the financial sector is weak, with a negative average ROE and ROA of -0.14 and -0.31, respectively, and high variability in data according to KPMG (2023) findings on pressure from the economic downturn. The industrial sector has the best performance, with a positive mean and median ROE and ROA, followed by deteriorating performance from the energy sector due to volatile global prices (Meade et al., 2017). The materials sector shows moderate performance with narrow margins. Financial data in the industrial sector is skewed positively, while other sectors, especially the financial sector, have high negative skewness.

Climate scores are most significant in the industrial sector (mean 0.62, median 0.63), as greater financial performance enables greater climate investment (Deloitte NZ, 2021). The finance and energy sectors have lower scores, but all industries score better. Data spread is great for the industrial sector, with the materials sector being normally distributed. The sector with the highest value of assets (mean NZD 128,103.60M) is from large firms such as Westpac and ANZ, although

1. A descriptive statistics table for all variables industry-wise is not provided due to its size.

median values suggest smaller firms lag (Reserve Bank of New Zealand, 2022). The energy sector has the oldest age for companies (mean 59), according to the Ministry of Business, Innovation and Employment (2018). Board size is five to seven directors, except for the energy sector, which is seven to nine (Financial Markets Authority, 2018).

4.1.3. Descriptive statistics for all variables, year by year[2]

The descriptive statistics indicate the various financial performances of firms from 2018–24. The period of Covid-19 (2020–21) indicated huge losses in firms such as Air New Zealand and RTO Limited, with a negative mean ROE (-0.05 and -0.15). Being AI Limited's huge loss in 2023 resulted in a negative mean ROA (-0.18), while losses by RTO Limited, Being AI Limited and ArborGen Holdings Limited resulted in a negative mean ROE (-0.1) in 2024. ROE data was positively skewed only in 2019, while ROA was positively skewed in 2019 and 2020. Financial performance as a whole was not consistent, with negative outcomes being more common following the pandemic (Białkowski & Sławik, 2022).

Climate scores improved significantly in 2023–24, with both mean and median being higher than 0.72, against 0.41 and 0.43 in 2019. ESG reporting by Aotearoa's top companies increased from 69% in 2017 to 74% in 2020 (Prichard et al., 2020). Asset values and market capitalisation showed variability, with gradual declines due to loss-making firms. Both were strongly positively skewed, aligning with Puri's (2022) findings on NZX-listed firms' market performance. Board sizes ranged from three to 13 directors, averaging six to eight, highlighting a need for improved diversity (Institute of Directors, 2024).

4.2. Regression results, findings and discussion

4.2.1. Climate reporting impact analysis

Table 3 shows the regression analysis results, which indicate that climate reporting items (GOV, STR, RSK, MNT, CNC and OTR) are not statistically significantly related to ROE. Similarly, the composite climate reporting metric (TLS) is not statistically related to ROE. The coefficient suggests a negative relationship between ROE and climate reporting. This is consistent with Chen et al. (2022), who did not establish a significant relationship between ESG performance and financial outcomes. However, companies undertaking social performance programmes such as employees' wellbeing and community participation demonstrated long-term financial performance. There was a positive relationship between climate risk-management and ROA.

In the case of ROA, regression analysis suggests that none of the climate reporting factors are significant except for metrics and targets (MNT), which has a positive significant coefficient. A rise of 1% in MNT is linked with an increase of 2.3% in ROA. The model has a moderate fit (Multiple R-squared: 0.39; Adjusted R-squared: 0.28). While some climate reporting factors (GOV, STR, CNC) have a negative association with ROA, there are others (RSK, MNT, OTR) that have a positive correlation. Regression analysis also confirms that TLS does not significantly affect ROA, with the model having a moderate fit (Multiple R-squared: 0.36; Adjusted R-squared: 0.27). Iriyadi and Antonio (2021) found a U-shaped relationship between climate-change disclosures and financial performance, where initial disclosure requirements reduced ROA but improved it in the long term. They recommend mandatory climate disclosure regulations for better risk-management and reporting quality. Supporting the same argument, descriptive statistics also show no strong trend in ROE or ROA for 2018 and 2019. Regression results also verify that financial performance does not have any strong relation with climate reporting, except that the MNT factor positively

2. A descriptive statistics table for all variables year by year is not provided due to its size.

impacts ROA. Greenhouse gas management, energy and water management result in better ROA. For example, a European study by Secinaro et al. (2020) found that corporate environmental activities, particularly carbon reduction, positively impact financial performance. Good environmental policies help firms reduce risks and costs, leading to improved profitability. Firms with high environmental performance also attain high ROE and ROI. These findings highlight the importance of integrating sustainability practices into business strategies to enhance long-term financial stability.

Table 3. Regression results for Equations 1, 2, 3 and 4.

	Eq. 1		**Eq. 2**		**Eq. 3**		**Eq. 4**	
	Coefficient	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**
Constant	-3.26	0.00***	-2.78	0.00***	-2.36	0.02*	-2.61	0.01**
GOV	1.39	0.11			-0.21	0.88		
STR	-1.43	0.13			-0.96	0.51		
RSK	0.57	0.36			0.27	0.78		
MNT	-0.89	0.19			2.30	0.03*		
CNC	0.25	0.69			-0.73	0.46		
OTR	-0.34	0.68			0.31	0.81		
TLS			-0.41	0.39			1.18	0.11
TAM	0.00	0.79	0.00	0.76	0.00	0.36	0.00	0.28
TAL	-0.18	0.00***	-0.16	0.00**	0.28	0.00***	0.30	0.00***
AGE	0.00	0.99	0.00	0.93	0.00	0.68	0.00	0.86
MCM	0.00	0.12	0.00	0.24	0.00	0.45	0.00	0.39
MCL	0.31	0.00***	0.28	0.00***	-0.18	0.08	-0.19	0.06
BDZ	0.08	0.02*	0.07	0.03*	-0.02	0.71	-0.04	0.49
Adjusted R = 0.3499			0.2016		0.2783		0.2745	

(Sig. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1)
Source: Authors' own creation.

4.2.2. Post-regulation impact analysis

Regression results in Table 4 (Eq. 5) show that climate reporting items (GOV, STR, RSK, MNT, CNC, OTR) are not related to ROE during the post-implementation period of mandatory climate reporting. Coefficients capture mixed associations: GOV, RSK and CNC are positively related to ROE, while STR, MNT and OTR are negatively related. These blended clusters suggest that the impact of some climate reporting factors on profitability can be complex and context dependent. This contrasts with Bendersky and Burks (2019), who speculate that ESG practices are generally beneficial to long-term profitability by reducing costs, enhancing efficiency and avoiding climate risk.

Table 4. Regression results for post-regulation (Equations 5, 6, 7 and 8).

	Eq. 5		Eq. 6		Eq. 7		Eq. 8	
	Coefficient	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**	**Coefficient**	**p-value**
Constant	-3.26	0.00***	-2.78	0.00***	-2.36	0.02*	-2.61	0.01**
Post_impl.	0.01	0.97	0.11	0.68	-0.31	0.48	-0.45	0.29
GOV	1.39	0.11			-0.21	0.88		
STR	-1.43	0.13			-0.96	0.51		
RSK	0.57	0.36			0.27	0.78		
MNT	-0.89	0.19			2.30	0.03*		
CNC	0.25	0.69			-0.73	0.46		
OTR	-0.34	0.68			0.31	0.81		
TLS			-0.41	0.39			1.18	0.11
TAM	0.00	0.79	0.00	0.76	0.00	0.36	0.00	0.28
TAL	-0.18	0.00***	-0.16	0.00**	0.28	0.00***	0.30	0.00***
AGE	0.00	0.99	0.00	0.93	0.00	0.68	0.00	0.86
MCM	0.00	0.12	0.00	0.24	0.00	0.45	0.00	0.39
MCL	0.31	0.00***	0.28	0.00***	-0.18	0.08 .	-0.19	0.06 .
BDZ	0.08	0.02*	0.07	0.03*	-0.02	0.71	-0.04	0.49
Adjusted R2 = 0.3544			0.2177		0.2691		0.2644	

(Sig. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1)
Source: Authors' own creation.

Regression results in Table 4 (Equation 6) do not show a statistical relationship between ROE and total climate-related reporting score (TLS) during the post-climate-reporting mandate period. However, a negative coefficient means a negative correlation. On the other hand, Naeem and Çankaya (2022) found that ESG performance was positively related to ROE in Europe, while they documented a negative correlation between ESG and ROA. Equation 7 in Table 4 reveals that none of the climate reporting items (GOV, STR, RSK, CNC, OTR) have a significant relationship with ROA, except for metrics and targets (MNT), which is statistically positively correlated with ROA. Equation 8 also confirms no significant relationship between ROA and TLS.

Overall, requirements for climate reporting have no significant impact on financial performance apart from MNT, which positively impacts ROA. Giannopoulos et al. (2022) also found comparable mixed results among Norwegian-listed firms, with a negative relationship between ROA and ESG but a positive one between ESG and firm value (Tobin's Q). These findings suggest ESG's financial impact varies by measure, with potential short-run negative impacts but long-run benefits.

5. Summary and Conclusion

The study examines the impact of mandatory and voluntary climate reporting on the financial performance of Aotearoa companies. Using ROE and ROA as financial performance metrics and climate reporting scores as explanatory variables, the study examined the effects from 2018 to 2024 and post-implementation impacts. The findings show no significant relationship between climate-related disclosure and financial performance, apart from the metrics and targets (MNT)

dimension, which has a positive association with ROA. This aligns with the previous literature (e.g., Brammer et al., 2006; Murray et al., 2006; Nelling & Webb, 2009) that contends that sustainability efforts do not yield short-term benefits but can improve financial performance over the long term. The comparison after the implementation of mandatory reporting also finds no significant impact on financial performance, except for the positive association of MNT with ROA. The results provide valuable insights for policymakers to enhance climate regulations and promote investments in climate adaptation initiatives.

The findings suggest that climate reporting can have a significant role in shaping markets' perception and investment decisions. Firms with more transparent and comprehensive climate reporting will be seen favourably by investors, as these reports reflect future-oriented risk management, regulatory readiness, and value-based regulators' thinking in the long run. This is in line with stakeholder theory and signalling theory, which hold that discretionary disclosure can reduce information asymmetry and maximise stakeholder trust. Therefore, investors can consider climate transparency as an indication of sound governance and lower risk-exposure in the future, which in turn might be reflected in enhanced financial performance and firm valuation (Krüger, 2015; Lins et al., 2017). Therefore, as a supplement to the regulatory or moral imperative, climate reporting would be a strategic tool to raise funds and stay competitive in more sustainability-focused markets.

Overall, the data indicates that mandated climate reporting has no impact on Aotearoa's financial performance. First, this could be due to market efficiency, because investors could have priced in the climate risks even before the mandate, and the majority of the companies might already have ESG strategies in place. Thus, additional reporting might not be required. Additionally, investors may prefer financial metrics over sustainability reports; thus, the compliance costs may be low, and there is no identifiable financial cost. Secondly, the short-term impact on finances could be limited, as the benefits of climate reporting, such as improved risk-management and reputation, would be more valued in the long term than in the short term. However, further research is needed to discuss and investigate these behavioural aspects more.

Future researchers should be mindful of some research constraints. First, five years is a comparatively short time for evaluating environmental programmes, and the actual impact might be observed in the longer term (Mardones, 2019). Climate reporting in Aotearoa has been voluntary prior to 2023, which limits data quality and availability. Therefore, its full implications must be seen over longer periods. Future research must account for longer post-enforcement time periods to establish financial performance changes. Industry-level studies with longer datasets can provide more meaningful conclusions regarding the effects of climate reporting. Second, shortcomings in financial performance metrics such as ROE and ROA might be unable to capture the long-term benefits of climate reporting (Nithin, 2023). Incorporating a broader set of performance indicators that can capture both financial and non-financial impacts of climate reporting will be helpful for future researchers to mitigate this problem. Additionally, investor perception and preference studies regarding climate reporting in the Aotearoa setting would be interesting and useful, offering helpful insights to investors with a sustainability agenda.

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Appendix 1. Climate Reporting Evaluating Scorecard

Climate reporting evaluation scorecard (KPMG NZ, 2023)

	For:	**Year:**		
	Reporting criteria	**Score 1–5**	**Score %**	**Weight %**
01	**Governance**			
01.1	Identity of the governance body responsible for oversight of climate-related risks and opportunities.			
01.2	Description of the governance body's oversight of climate-related risks and opportunities.			
01.3	Processes and frequency by which the governance body is informed about climate-related risks and opportunities.			
01.4	Skills and competencies available to provide oversight of climate-related risks and opportunities.			
01.5	Consideration of climate-related risks and opportunities in strategy development and oversight.			
01.6	Oversight of metrics and targets for managing climate-related risks and opportunities.			
01.7	Management's role in assessing and managing climate-related risks and opportunities.			
	Total governance	**0**	**0.0%**	**30.0%**
		Out of 35		
02	**Strategy**			
02.1	Description of current climate-related impacts (physical and transition impacts).			
02.2	Financial impacts of physical and transition impacts.			
02.3	Description of scenario analysis undertaken.			
02.4	Description of climate-related risks and opportunities identified over short, medium, and long term.			
02.5	Anticipated impacts of climate-related risks and opportunities.			
02.6	Positioning as the global and domestic economy transitions towards a low-emissions, climate-resilient future.			
	Total strategy	**0**	**0.0%**	**25.0%**
		Out of 30		

03	**Risk management**			
03.1	Processes for identifying and assessing climate-related risks (transition and physical risks).			
03.2	Integration of climate-related risks into overall risk management processes.			
	Total risk management	**0**	**0.0%**	**10.0%**
		Out of 10		
04	**Metrics and targets**			
04.1	Disclosure of relevant metrics (GHG emissions, GHG emissions intensity, etc.).			
04.2	Disclosure of transition risks, physical risks and climate-related opportunities.			
04.3	Internal emissions price and remuneration linked to climate-related risks and opportunities.			
	Total metrics and targets	**0**	**0.0%**	**15.0%**
		Out of 15		
	Consistency and restatement of comparatives			
05.1	Consistency in reporting climate-related information over time.			
05.2	Disclosure of restatements of previous disclosures, if any.			
05.3	Explanation for restatements and their impact.			
	Total consistency and restatement of comparatives	**0**	**0.0%**	**10.0%**
		Out of 15		
	Other			
06.1	Description of methods and assumptions used in climate-related disclosures.			
06.2	Discussion on data and estimation uncertainties.			
06.3	Statement of compliance with relevant reporting standards (e.g., TCFD, GRI).			
06.4	Alignment with industry best practices and guidelines.			
06.5	Fair and balanced presentation of climate-related risks and opportunities.			
06.6	Avoidance of misleading or biased information.			
	Total other	**0**	**0.0%**	**10.0%**
		Out of 30		
Total climate reporting score				**0.0%**