

The Determinants and Informativeness of ‘Voluntary’ Climate and sustainability Related Financial Disclosures in Australia

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Pros:

- Very relevant and topical at present
- Appendices 2, 3 & 4 were very helpful. For example:

CLIMATE_CHANGE =

No. of times 24 climate change keywords mentioned in financial statements & notes

Impact of climate change related risk

AGL recognises that there is an increased pace of change in the energy industry, community perspectives and associated political landscape.

The scenario analysis undertaken as part of AGL's impairment analysis includes scenarios that are consistent with the TCFD analysis performed. Our assessment shows that a change to the planned closure dates of AGL's coal-fired/thermal generation plants as a result of climate change may have a material impact on the National Electricity Market and may result in a material change to AGL's estimated cash inflows. Similarly, any change to policy in relation to climate change may have a material impact on the National Electricity Market and may result in a material change to AGL's estimated cash inflows.

Cons: Areas for future consideration:

1. Descriptives
2. Determinant Model
3. Hypothesis 1
4. Hypothesis 3

1. Descriptive statistics

2018-2022

- Level of voluntary disclosure:
 - Consistent with prior surveys
 - 42.9% of firm-year observations disclose (57.1% do not disclose)
- Differences between disclosers and non-disclosers?
 - Descriptives statistics would be helpful (including industry location)
- Minor point
 - FF48 industries using Standard Industry Classification (SIC) – is this the most informative?

Table 2: Descriptive statistics

Panel A: descriptive statistics on all variables for the full sample

Variable	N	Mean	Q1	Median	Q3
<i>CLIMATE_CHANGE</i>	886	2.521	0.000	0.000	2.000
<i>SUSTAINABILITY</i>	886	5.418	0.000	2.000	7.000
<i>ACCU_DEP&AMOR</i>	796	0.092	0.001	0.002	0.116
<i>LOGAUDITFEE</i>	663	5.534	5.150	5.555	5.862
<i>SHARE_PRICE</i>	886	6.660	0.090	1.570	5.780
<i>TOBINS'Q</i>	796	1.552	0.960	0.860	1.950

Panel B: Sample distribution by industry

Industry distribution			
No.	Industry name	Industry sample	Industry % of total
1	Trading	107	13.44%
2	Metal and mining	83	10.43%
3	Business Services	60	7.54%
4	Precious Metals	29	3.64%
5	Petroleum and Natural Gas	29	3.64%
6	Food Products	26	3.27%
7	Retail	26	3.27%
8	Banking	18	2.26%
9	Coal	16	2.01%
10	Pharmaceutical Products	15	1.88%
	All others	387	48.62%
Total		796	100.00

2. Result for Determinants Model

- To assess the type of firms voluntarily providing climate (sustainability) related disclosures, estimate:

$$CLIMATE_CHANGE/SUSTAINABILITY_{it} = \beta + \beta HIGH_CLIMATE_RISK_{it} + \beta CONTROLS_{it} + INDUSTRYFE + YEARFE + e_{it}$$

- Results: Location in a high climate risk industry is **negatively** associated with number of climate-related mentions in a firm's financial statements
- Counter-intuitive and inconsistent with prior research

TCFD (2017): Sectors and Industries with the highest likelihood of climate-related financial impacts

Energy	Transportation	Materials and Buildings	Agriculture, Food, and Forest Products
- Oil and Gas	- Air Freight	- Metals and Mining	- Beverages
- Coal	- Passenger Air Transportation	- Chemicals	- Agriculture
- Electric Utilities	- Maritime Transportation	- Construction Materials	- Packaged Foods and Meats
	- Rail Transportation	- Capital Goods	- Paper and Forest Products
	- Trucking Services	- Real Estate Management and Development	
	- Automobiles and Components		

Truong et al. (2020): Industries more sensitive to climate issues

Agriculture, Forestry and fishing, Healthcare, Chemicals, Construction, Steel and steel works, Automobiles, Mines, Coal, Oil petroleum and natural gas, Utilities

3. Hypothesis 1:

H_1 : Climate change (sustainability) related financial disclosures are *positively* associated with accumulated depreciation and amortisation

Logic (pp. 15-16)

- Climate related risk reflected in *'asset impairment, changes in the asset's useful life and accelerated depreciation'* (p. 15)
 - **Increased** depreciation due to:
 - Reduction in expected useful life of assets vulnerable to climate-related risk
 - Additional capital expenditure (e.g. retrofitting assets)
 - **Increased** amortisation due to:
 - Investment in developing new cleaner technologies
- Argue that *'firms seriously considering climate-related risk (CSRR) are likely to accelerate the write-off of their fixed assets and intangibles gradually over an extended period of time, instead of delaying the write-off'* (p. 15)
- **What about impairment?**

Hypothesis 1 (cont.):

Prior research suggests that impairment is key

Xu, Thai and Herbohn (2022) AASB Research Forum. Period: 2017 - 2020

Pinnuck, Wallis, Ghandar and Pateman (2022). CA ANZ: Dec 2020 to Sept 2021

Figure 4. Nature of financial statement disclosure of climate risk by industry sector

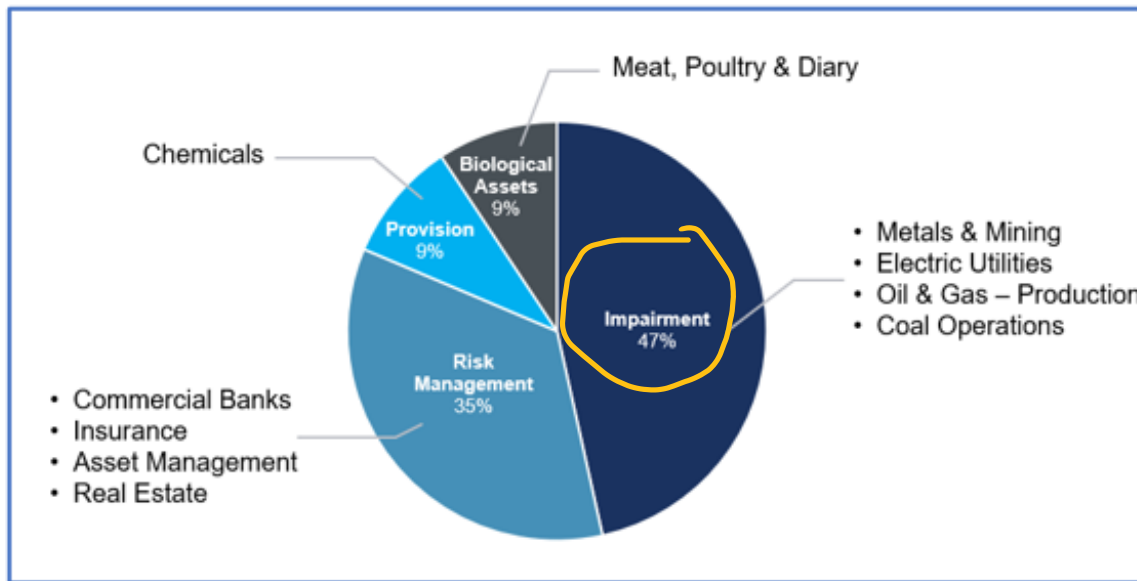
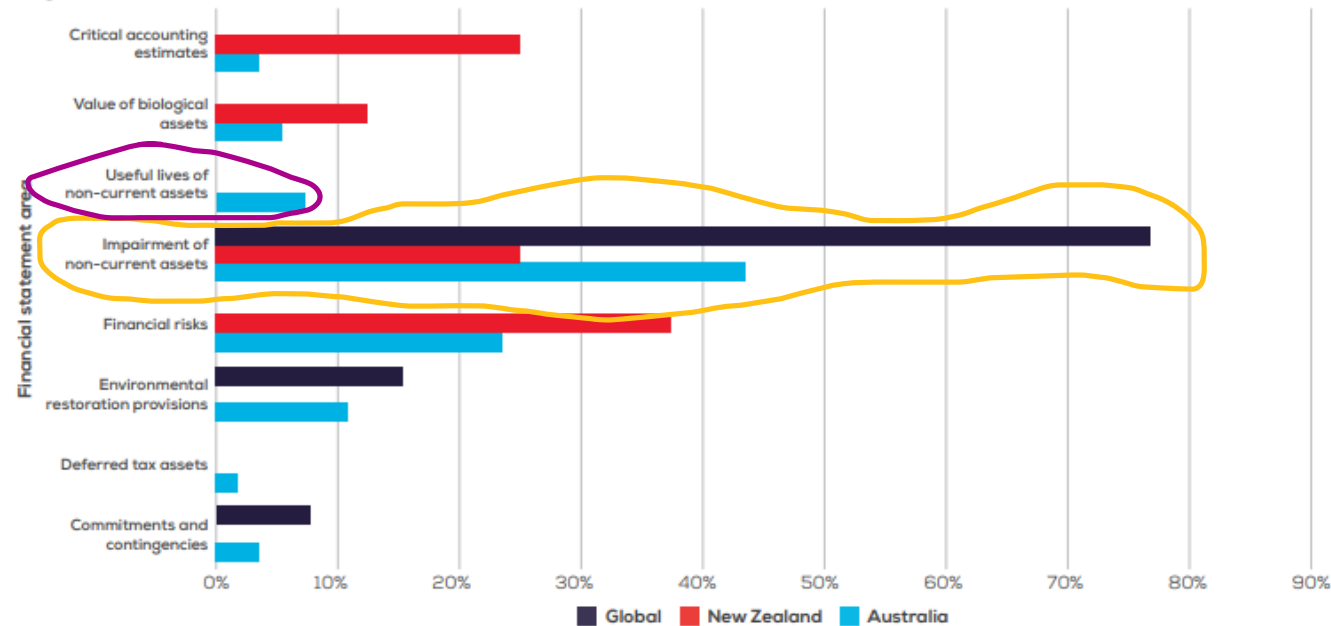


Figure 1: Financial statement areas impacted by climate-related risks



- Questions to consider?
 - Companies will exercise discretion to avoid write-downs associated with impairment?
 - Is it credible/feasible for companies (part. in climate sensitive areas) to ignore impairment)?

Hypothesis 1 (cont.)

Sustainability:

- Broad topic e.g. biodiversity, modern slavery, workplace diversity
- Helpful to have a conceptual argument linking:
 - frequency of sustainability related disclosures &
 - balance of accumulated depreciation and amortisation

Table 5: Results of regression estimates for accumulated depreciation and amortisation and climate change, sustainability and risk related financial disclosures for the test of H1

Dependent variable	= <i>ACCU_DEP&AMOR</i>		
Variables	(1)	(2)	(3)
<i>CONSTANT</i>	0.059** (2.33)	0.071*** (2.81)	0.059** (2.34)
<i>CLIMATE_CHANGE</i>	0.005*** (4.46)		0.004*** (3.47)
<i>SUSTAINABILITY</i>		0.002*** (3.00)	0.001 (1.12)
<i>CORPGOV_SCORE</i>	-0.037* (-1.81)	-0.044** (-2.16)	-0.038* (-1.86)
<i>SOCIAL_SCORE</i>	0.023 (0.67)	0.016 (0.47)	0.021 (0.62)
<i>ENVRN_SCORE</i>	0.005 (0.16)	0.013 (0.39)	0.007 (0.21)
<i>ECON_SCORE</i>	-0.001 (-0.02)	-0.002 (-0.08)	-0.000 (-0.01)

Minor point: conceptual reasoning

Hypothesis 2: The frequency of climate (sustainability) related disclosures is positively associated with audit fees.

Results in Table 6 support & consistent with prior literature.

Hypothesis 3

H₃: Climate (sustainability) related disclosure increase the value relevance of financial information

Why?

Argument presented:

- Results in additional information to assess the quality of financial reports
- Firms providing voluntary climate (sustainability)-related financial disclosures are expected to have lower risk associated with the quality of financial information, therefore the financial information of such firms should be more value relevant to that of non-disclosing firms

Conceptual argument

- Develop further
- Interpret the results in Table 8? What are the implications?

Table 7: Results of regression estimates for value-relevance of climate change, sustainability and risk related financial disclosures for the test of H3

Dependent variable	= <i>SHARE_PRICE</i>		
Variables	(1)	(2)	(3)
<i>CONSTANT</i>	4.943*** (5.28)	5.275*** (5.70)	4.881*** (5.20)
<i>CLIMATE_CHANGE</i>	0.153** (2.19)		0.189** (2.32)
<i>SUSTAINABILITY</i>		0.018 (0.37)	-0.048 (-0.86)
<i>EPS</i>	10.404*** (11.67)	10.390*** (11.57)	10.486*** (11.69)
<i>BVPS</i>	1.058*** (11.47)	1.092*** (11.98)	1.056*** (11.44)

Table 8: Results of regression estimates for incremental value-relevance of climate change, sustainability and risk related financial disclosures for the test of H3

Dependent variable	= <i>SHARE_PRICE</i>		
Variables	(1)	(2)	(3)
<i>CONSTANT</i>	2.309 (0.75)	2.261 (0.72)	3.621 (1.19)
<i>CLIMATE_CHANGE</i>	-0.212*** (-2.81)		-0.236*** (-2.69)
<i>SUSTAINABILITY</i>		-0.147*** (-2.81)	-0.040 (-0.68)
<i>EPS</i>	9.850*** (11.82)	11.357*** (12.42)	9.557*** (10.35)
<i>BVPS</i>	0.715*** (7.52)	0.518*** (5.06)	0.487*** (4.70)
<i>EPS_CLIMATE_CHANGE</i>	0.555*** (5.15)		0.634*** (5.68)
<i>BVPS_CLIMATE_CHANGE</i>	-0.005 (-0.52)		-0.017 (-1.62)
<i>EPS_SUSTAINABILITY</i>		0.077 (1.26)	-0.017 (-0.28)
<i>BVPS_SUSTAINABILITY</i>		0.027*** (4.70)	0.028*** (4.85)

Hypothesis 4:

H₄: Climate (sustainability) related disclosure are positively associated with firm value

- Results reported in Table 9 are consistent with H₄