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(A) Working Title	The Value Relevance of Carbon Risk with Influence from Business Strategy				
(B) Basic Research Question	Can a firm's business strategy mitigate the negative market value impact from its carbon risk?				
(C) Key Paper(s)	<p>Clarkson, P.M., Li, Y., Pinnuck, M., & Richardson, G. 2015. The Value Relevance of Greenhouse Gas Emissions under the European Union Carbon Emissions Trading Scheme. <i>European Accounting Review</i>, 24:551-580.</p> <p>Bentley, K.A., Omer, T.C., Sharp, N.Y. 2015. Business Strategy, Financial Reporting Irregularities, and Audit Effort. <i>Contemporary Accounting Research</i>, 30: 780-817.</p>				
(D) Motivation/Puzzle	<p>As proved by previous studies, the exposure to carbon risk, proxied by historic carbon footprint, is viewed as a liability by the market, which will lead to a decrease in firms' market value. In order to mitigate this risk, various measures can be taken. For instance, in a forward-looking perspective, a firm may consider to utilise its business strategy to improve its public image, consequently to mitigate the negative impact on its market value from the carbon risk. Therefore, this paper hopes to examine the effectiveness of employing business strategy as a risk management tool in mitigating carbon risk.</p>				
THREE	Three core aspects of any empirical research project i.e. the "IDioTs" guide				
(E) Ideas?	<p>To answer our research question, the simplified Ohlson Model (1995) is adopted to measure the influence from a firm's carbon risk and business strategy on its market value. The research model is as follows:</p> $V = \alpha_0 + \alpha_1 BV + \alpha_2 AE + \alpha_3 EMIS + \alpha_4 DEF + \alpha_5 PRO + \alpha_6 EMIS \times DEF + \alpha_7 EMIS \times PRO + \varepsilon$ <p>Where:</p> <p>V represents for a firm's market value, measured by the number(weighted average) of outstanding common shares during $year_t$ times firm's share price at the end of April in $year_{t+1}$ (sensitivity tests will be conducted for share price at the end of $year_t$ and 90 days after the year end to confirm the robustness of our results);</p> <p>BV and AE are respectively book value of common equity and abnormal earnings of the firm in $year_t$;</p> <p>EMIS stands for relative historic carbon footprint, measured as the total scope 1 greenhouse gas emissions during the $year_t$ divided by current year sales revenue;</p> <p>DEF and PRO are abbreviations for two categories for business strategies, i.e. defender and prospector. This typology from Miles and Snow (1978, 2003) was chosen for this research mainly because this typology can be operationalised using archival data (Ittner et al. 1997), and has been extensively tested scrutinised in prior studies.</p> <p>Because prospectors are innovators and adventurers in the industry, featured by a great emphasis on R&D, the market may perceive high carbon emission in prospectors as a necessary side effect of their intensive innovation activities. Hence, we posit that the firms which adopt a prospector business strategy will mitigate carbon risk, thus α_7 should be positive. As defenders focus on the efficiency of production and are averse against costs and risks, high carbon emission may be viewed by the investors as a signal of management failure. Therefore, we assume that firms with defender business strategy may not be able to mitigate carbon risk, consequently α_6 will be either zero or negative.</p>				

	<p>In this vein, our hypothesis is:</p> <p><i>H0: The prospector business strategy mitigates the negative market value impact of carbon emissions, whereas the prospector business strategy does not.</i></p>
(F) Data?	<p>The initial sample will cover all ASX listed companies from 2006-2015. Adjustments will be made during the data collection process. Because we follow Bentley et al. (2015), and apply a discrete scoring system to measure business strategies on a five-year rolling average basis, actually information to be collect will start from the year of 2001. To measure business strategy for a particular company-year observation, six metrics are considered: ratio of R&D to sales, ratio of employees to sales, change in total revenue, ratio of marketing expense to sales, employee fluctuations, and capital intensity. The five-year average of each variable will be respectively ranked into quintiles per industry and year, to generate a score from 1(lowest quintile) to 5(highest quintile). Then, scores from these six metrics will be summed up to be the strategy score for this company-year observation. Finally, strategies scoring from 6 to 12 belong to the defender category, whereas strategies scoring from 24 to 30 will be categorised as prospectors.</p> <p>The greenhouse emission statistics will be retrieved from the National Greenhouse and Energy Reporting data available on Clean Energy Regulator website. Other data, including share price, number of shares outstanding, book value of common equity and abnormal earnings, will be collected from Morningstar and company annual reports.</p>
(G) Tools?	This will be a research based on empirical data. Regression will be run by Stata to generate coefficients, p-values and other indicators.
TWO	Two key questions
(H) What's New?	The main innovation of this research is our research idea. To our best knowledge, this will be the first empirical study to examine the influence of business strategy on the market value impact of carbon emissions.
(I)So What?	This study is important for its possible value for both academic researchers and the industries. If significant outcome can be observed, we will be able to prove the effectiveness of utilising business strategy to manage carbon risk. This will not only influence the decision making of companies when they encounter carbon risks, but will also contribute to the business strategy and risk management research area.
ONE	One bottom line
(J)Contribution?	This study will contribute to carbon accounting, risk management and business strategy research literature. It may also render practical insights in carbon risk management for companies with a potential of high carbon emission.
(K) Other Considerations	<p>The major challenge in this thesis is the data processing for business strategy. According to the rubric in Bentley et al. (2015), 6 ratios involving 6 different figures need to be collected from each company over a 15-year period. Then all the ratios will be taken average on a five-year rolling basis, ranked in quintiles to score each company-year observation. Huge amounts of effort and time may be required for this task.</p> <p>Possible risks of this study include “no significant result” and “being beaten by a competitor”. Therefore, alternative measures for the variables may be taken in order to generate valuable outcomes. The researcher also needs to improve time management skills so as to complete this paper efficiently.</p>