Corporate Governance Paper Competition and Presentation Awards 2023

Climate change disclosures - is the world too focused on this topic?

Contents

The Hong Kong Chartered Governance Institute

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The Hong Kong Chartered Governance Institute (HKCGI), formerly known as The Hong Kong Institute of Chartered Secretaries (HKICS), is the only qualifying institution in Hong Kong and Mainland China for the internationally recognised Chartered Secretary and Chartered Governance Professional qualifications.

With over 70 years of history and as the Hong Kong/China Division of The Chartered Governance Institute (CGI), the Institute's reach and professional recognition extends to all of CGI's nine divisions, with about 40,000 members and students worldwide. HKCGI is one of the fastest growing divisions of CGI, with a current membership of over 7,000, 300 graduates and 2,600 students with significant representations within listed companies and other cross-industry governance functions.

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HKCGI Corporate Governance Paper Competition and Presentation Awards

The Annual Corporate Governance Paper Competition and Presentation Awards organised by the Institute aims at promoting the importance of good governance among local undergraduates and providing them with an opportunity to research, write and present their findings and opinions on the selected theme.

Current undergraduates of all disciplines in Hong Kong were eligible to enrol for this competition in a team of two to four members. Participants are required to submit a paper of not more than 5,000 words in English on the theme of the year's competition.

The six finalist teams with the highest total scores were invited to present their papers to compete for the Best Presentation Award and the Audience's Favourite Team Award.

Topics of previous years' competition:

2007	Corporate Social Responsibility
2008	Corporate Risk
2009	Investor Relations
2010	Disclosure & Transparency
2011	Best Practices vs Practicality
2012	The 21st Century Board
2013	Corporate Governance means more Reports and Disclosure?
2014	Changing Rules, Changing Roles – Managing It All
2015	Risk Management and Corporate Governance
2016	Internal and External Forces for Better Corporate Governance
2017	Corporate Governance and Business Sustainability
2018	Corporate Governance – Challenges and Opportunities in the Digital Age
2019	How is good governance of Non-Governmental Organisations (NGOs) similar to, and different from, good corporate governance of public companies age
2020	ESG Reporting: A Value Proposition? Yes or No?
2021	Is it possible to tie governance with a sense of purpose given the myriad of stakeholders' interests?
2022	Do you think better governance leads to a better future for organisations?
2023	Climate change disclosures – is the world too focused on this topic?

Prizes of the competition

Paper Competition	Best Paper Award	HK$11,000 plus publication of the paper in 'CGj', the monthly journal of the Institute
	First runner–up	HK$7,000
	Second runner–up	HK$5,000
	Three Merit Prizes	HK$1,000 each

Paper Presentation	Best Presentation Award	HK$6,000
	First runner–up	HK$3,000
	Second runner–up	HK$2,000
	Three Merit Prizes	HK$1,000 each
	Audience's Favourite Team	HK$2,000

Best Paper Award

Yannie Kum and Selina Wu
The University of Hong Kong, Bachelor of Laws

Introduction

'Of all risks, it is in relation to the environment that the world is most clearly sleepwalking into catastrophe,' the World Economic Forum warned.[1] Thus, revealing information about climate change, including but not limited to a company's carbon footprint and potential impacts of climate change on its operations and prospects[2] is given increasing weight in the capital market. As such, climate change disclosure is not only used as a government policy to encourage or even mandate companies to regulate their production to minimize environmental impacts, it is also an indicator of sustainable investing. Aside from profitability, environmental concern is becoming one of the dominant factors influencing investment decisions.[3] Under the rising trend of green investing, GSS+[4] volumes held a 5% share of the global bond market in 2022,[5] implying an expanding demand for climate-related disclosure from companies to ensure sustainable business practices. Yet, this has sparked a debate over whether the world is too focused on climate change disclosure. We believe that the world is not too focused on it; as climate risks become urgent, the world begins to give it a proportionate level of attention.

1 The World Economic Forum, Marsh & McLennan Companies, and Zurich Insurance Group. 'The Global Risks Report 2019, 14th Edition.' The World Economic Forum, 2019. www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf.

2 European Central Bank. 'What Are Climate Disclosures?' 21 April 2023. www.ecb.europa.eu/ecb/educational/explainers/html/what-are-climate-disclosures.en.html.

3 Big Society Capital. 'Social and Environmental Impact Now Part of the Investment Decision-Making Status Quo,' 10 May 2022. https://bigsocietycapital.com/latest/social-and-environmental-impact-now-part-of-the-investment-decision-making-status-quo/.

4 GSS+ stands for 'Green, Social, Sustainability, Sustainability-linked and transition bond'.

5 The Climate Bonds Initiative. 'Green and Other Labelled Bonds Held Market Share in 2022 Amidst Fall of Global Fixed-Income.' Accessed 29 June 2023. www.climatebonds.net/resources/press-releases/2023/01/green-and-other-labelled-bonds-held-market-share-2022-amidst-fall.

This paper is dedicated to: (i) defining the concept of Environmental, Social, and Governance; (ii) exploring current climate change disclosure regimes in a global context; (iii) explaining the factors supporting the view that 'the world is too focused on climate change disclosure'; (iv) if so, stating the challenges the world would face; (v) providing justifications for upholding our stance; and (vi) envisaging the future direction of climate change disclosure.

Environmental, Social, and Governance (ESG)

ESG is a non-financial framework using Environmental, Social and Governance factors to: (i) assess the sustainability of companies; and (ii) measure business risks and opportunities (see Figure 1).[6] Socially responsible investors would usually use ESG performance as a benchmark to screen investments.[7] The following examines the intimate relationship between climate change disclosure and ESG, forming the bedrock of a sustainable economy.

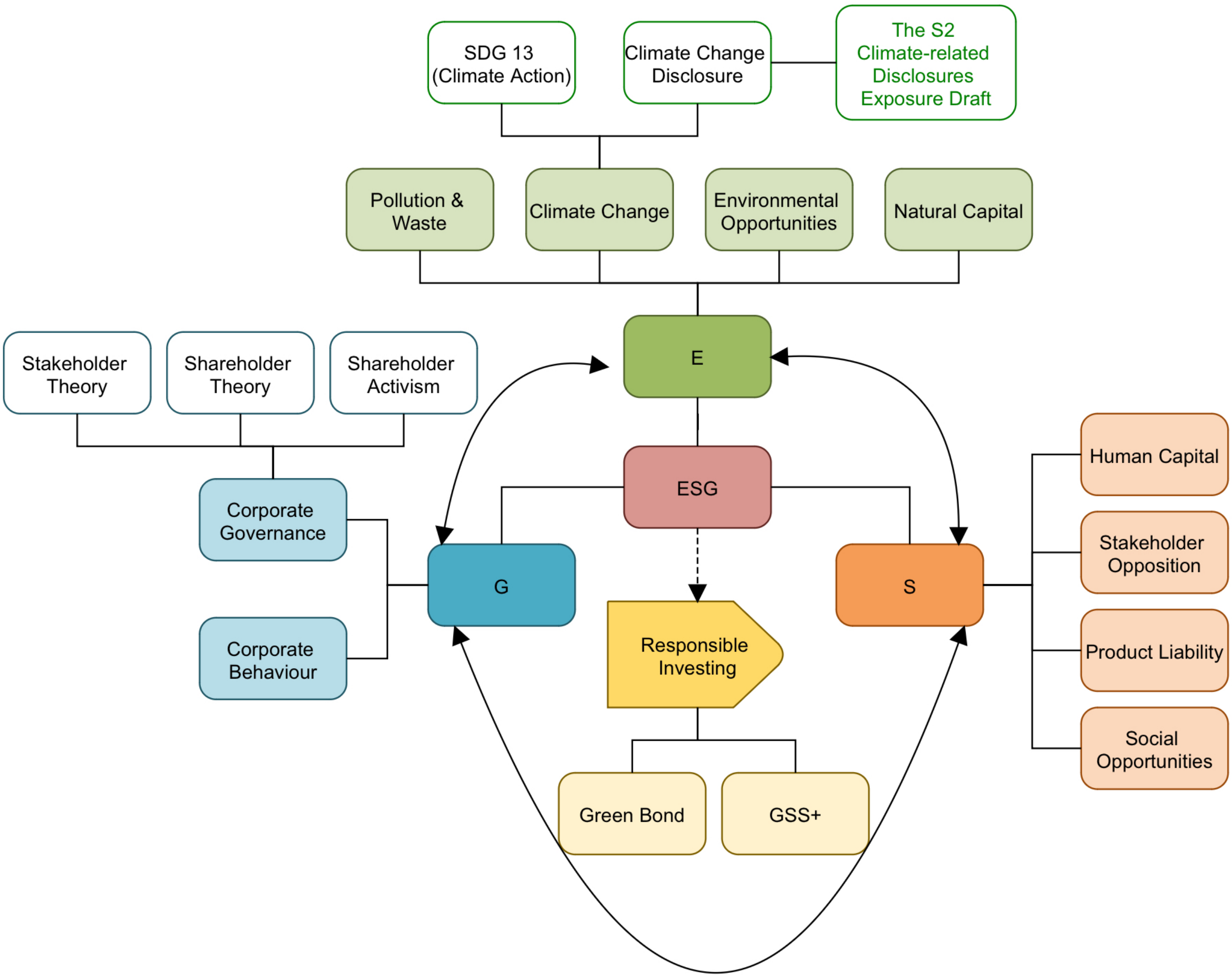

Figure 1: ESG Framework[8]

6 Mathis, S., and Stedman, C. 'DEFINITION Environmental, Social and Governance (ESG).' TechTarget, March 2023. www.techtarget.com/whatis/definition/environmental-social-and-governance-ESG.

7 Market Business News. 'What Is ESG? Definition and Meaning.' Accessed 30 June 2023. https://marketbusinessnews.com/financial-glossary/esg-definition-meaning/.

8 EVLI. "Field Guide to ESG," 13 June 2018. www.evli.com/blog/funds/field-guide-to-esg.

Environmental

Environmental factor examines a company's environmental impacts and risk management practices, including the company's overall resiliency against climate risks.[9] Climate change disclosure serves as a tool to assess the environmental factor by publishing: (i) the carbon footprint of business activities; (ii) the vulnerability of the business activities to climate risks; and (iii) the company's planning to combat climate risks.[10] Climate risks are categorized into: (a) physical risks; and (b) transition risks. The former risk relates to the physical impacts of climate change while the latter relates to the transition to a lower-carbon economy.[11] With a growing call for climate change disclosure, there are multiple international independent organizations running the global disclosure system, guidelines, or standards for companies to manage their environmental impacts. Carbon Disclosure Project Worldwide (CDP),[12] the Sustainability Accounting Standards Board,[13] and the Global Reporting Initiative[14] are some examples.

Social

This paper focuses on environmental and governance aspects. For completeness, the social factor looks at a company's relationship with internal and external stakeholders,[15] ranging from employees, suppliers, and customers to community members and more.[16]

Governance

Corporate governance looks at a company's management, for instance, how well it manages: (i) capital distribution; (ii) the balance of interest between internal and external stakeholders; and (iii) compliance with established standards relating to accounting and risks.[17] It is critical to a company's level of accountability and transparency of leadership.[18] When it comes to prioritizing a company's business and social responsibilities, there has been a longstanding controversy over the merits of: (i) shareholder theory; and (ii) stakeholder theory. Stakeholder theory is a more accepted theory in today's world where climate change disclosure is a gradually common corporate practice. It suggests that profit maximization is not the sole corporate responsibility; businesses should have a moral responsibility to consider the interests and well-being of their stakeholders.[19]

As such, stakeholder theory implies a positive relationship between: (i) the extent of responsiveness to the pressure of institutional stakeholders; and (ii) the level of climate change disclosure.[20] The S2 Climate-related Disclosures Exposure Draft (The Draft) published by the ISSB in March 2022 is structured around four areas, namely: (i) governance; (ii) strategy; (iii) risk management; and (iv) metrics and targets.[21] The details in each area will be discussed in Section 3A. By issuing the global baseline for climate change disclosure, businesses could be more familiar with climate change reporting requirements, thus fulfilling the ethical responsibility to the environment.

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9 Peterdy, K. 'ESG (Environmental, Social, & Governance).' CFI Education Inc., 30 June 2022. https://corporatefinanceinstitute.com/resources/esg/esg-environmental-social-governance/.

10 n2.

11 United States Environmental Protection Agency. 'Climate Risks and Opportunities Defined.' Accessed 1 July 2023. www.epa.gov/climateleadership/climate-risks-and-opportunities-defined.

12 'CDP Worldwide.' Accessed 1 July 2023. www.cdp.net/en.

13 Climate Disclosure Standards Board and The Sustainability Accounting Standards Board. 'TCFD Implementation Guide,' 2019. www.sasb.org/wp-content/uploads/2019/08/TCFD-Implementation-Guide.pdf?__hstc=105637852.c8aa5f78828a8ff22c16650ec62e93f8.1582824054969.1585058786292.1585132514669.7&__hssc=105637852.1.1585132514669.

14 'Climate Disclosure Standards Board.' Accessed 1 July 2023. www.cdsb.net/global-reporting-initiative.

15 Investopedia. 'What Is Environmental, Social, and Governance (ESG) Investing?' 22 March 2023. https://www.investopedia.com/terms/e/environmental-social-and-governance-esg-criteria.asp.

16 n6.

17 Robeco. 'SUSTAINABLE INVESTING ESG Definition.' Accessed 2 July 2023. www.robeco.com/en-hk/glossary/sustainable-investing/esg-definition.

18 n8.

19 Haegele, B. 'Stakeholders vs. Shareholders: What's the Difference?' Bankrate, 7 October 2022. www.bankrate.com/investing/stakeholders-vs-shareholders/.

20 Grosbois, D., and Fennell, D. 'Determinants of Climate Change Disclosure Practices of Global Hotel Companies: Application of Institutional and Stakeholder Theories.' Tourism Management 88 (February 2022). www.sciencedirect.com/science/article/pii/S0261517721001230.

21 The International Sustainability Standards Board. 'Exposure Draft ED/2022/S2 Climate-Related Disclosures.' The International Sustainability Standards Board, March 2022. www.ifrs.org/content/dam/ifrs/project/climate-related-disclosures/issb-exposure-draft-2022-2-climate-related-disclosures.pdf.

Current Climate Change Disclosure Regimes in Global Context

Hong Kong SAR (HK)

To strive for carbon neutrality by 2050, HK's climate change disclosure is now tightened.[22] Hong Kong Exchanges and Clearing proposed to mandate all listed companies in HK to provide climate change disclosure in their ESG reports.[23] It will take effect from 1 January 2024 and be introduced as a new Part D of Appendix 27 to the Hong Kong Listing Rules.[24] It marks an upgrade from the current 'comply-or-explain' regime where issuers are allowed either to make climate change or justify their absence.[25]

As the proposal strives to align HK's ESG regime with the global climate change disclosure standards, it builds on The Draft (see Figure 2). First, companies must reveal their climate-related goals and whether their attempts to mitigate or adapt to climate change will alter their business models and strategies.[26] Second, they must disclose how resilient their business models are to the effects of climate change, including a quantitative analysis of current impacts and a qualitative description of future impacts on their financial performance, position, and cash flows.[27] Third, the percentage of their assets or business operations susceptible to climate risks or aligned with climate-related opportunities, as well as funding allocated to them must be disclosed.[28] Fourth, greenhouse gas (GHG) emissions for Scope 1, Scope 2, and Scope 3,[29] information on any internal carbon pricing maintained by companies, as well as how climate-related considerations are factored into executive compensation policies must be revealed.[30]

Prior to the implementation of the mandatory policy, some listed companies like Bank of China,[31] CLP Power,[32] and Standard Chartered[33] had already provided climate change disclosures on their own initiative.

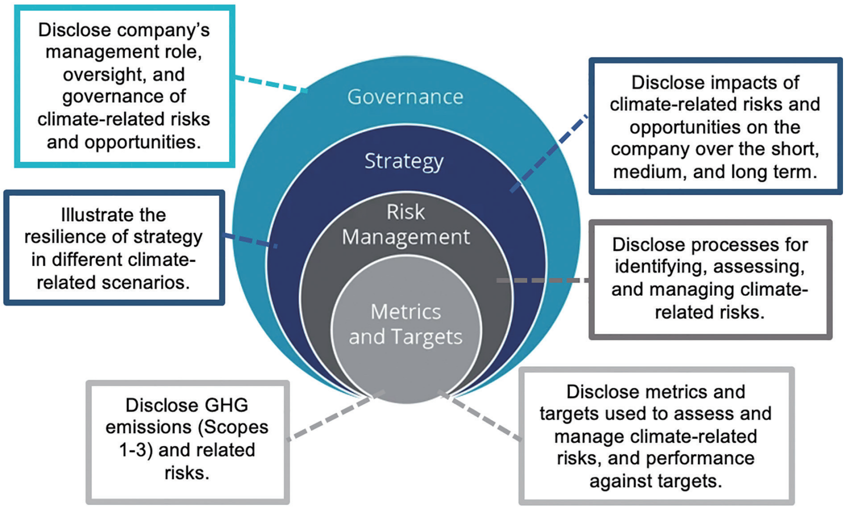

Figure 2: Climate Change Disclosure Framework

22 Reuters. 'Hong Kong to Make Climate Disclosures Mandatory for Issuers.' 15 April 2023. www.reuters.com/business/sustainable-business/hong-kong-make-climate-disclosures-mandatory-issuers-2023-04-14/.
23 The Hong Kong Chartered Governance Institute. 'Climate Disclosure: New Regulatory Proposals,' 19 June 2023. https://cgj.hkcgi.org.hk/2023/06/climate-disclosure-new-regulatory-proposals/.
24 Ibid.
25 n22.
26 Regulation Asia. 'HK to Mandate Climate-Related Disclosures from 2024.' ESG Investor, 17 April 2023. www.esginvestor.net/hk-to-mandate-climate-related-disclosures-from-2024/.
27 Ibid.
28 Ibid.
29 Scope 1 emission refers to 'direct GHG emissions occurred from issuer's own sources'. Scope 2 emission refers to 'indirect GHG emissions occurred from issuer's purchased electricity'. Scope 3 emission refers to 'indirect GHG emissions occurred from issuer's value chain'.
30 n26.
31 BOC Hong Kong (Holdings) Limited. 'Climate-Related Financial Disclosures Report 2022,' 2022. www.bochk.com/dam/bochk/desktop/top/aboutus/esg/report/tcfd_report_en.pdf.
32 CLP. '2022 Climate-Related Disclosures Report,' 2022. www.clpgroup.com/content/dam/clp-group/channels/sustainability/document/sustainability-report/2022/CLP_Climate_Related_Disclosures_Report_2022_en.pdf.coredownload.pdf.
33 Standard Chartered. 'Annual Report 2022 Connecting the World's Most Dynamic Markets,' 2022. https://av.sc.com/corp-en/content/docs/standard-chartered-plc-full-year-2022-report.pdf.

The Mainland of China (the Mainland)

By 2060, the amount required in infrastructure investment, as per the People's Bank of China, might total between RMB100 trillion and RMB200 trillion.[34] As such, the Mainland employed a top-down strategy to support these goals and was the first nation in the world to create a complete policy framework for green finance, which was launched in 2016.[35] In contributing to the world economy, the overall trend of non-financial direct investment by Chinese enterprises in 57 countries increased in 2016-2021, with the proportion of investment also rising year by year (see **Figure 3**).

Additionally, the Guidance for Enterprise ESG Disclosure (Guidance) was released by the China Enterprise Reform and Development Society (CERDS) alongside several notable Chinese corporations, with effect from 1 June 2022.[36] The Guidance, which applies to all businesses and sectors, is the Mainland's first ESG disclosure policy.[37]

The Guidance outlines a framework for Chinese businesses to report under three core metrics for environmental, social, and governance measures, which are further broken down into 10 secondary metrics, 35 tertiary metrics, and 118 total metrics.[38] The Guidance's most significant aspect is how it adjusts ESG principles to the needs of domestic laws and regulations along with the Chinese business landscape. This is described as 'international guidelines with Chinese characteristics'.[39] It includes references to the unique features of the Mainland's social welfare system, such as social security and the housing provident fund.

While compliance with the Guidance remains voluntary, Chinese businesses may leverage it as a springboard to explore the use of ESG standards that have been tailored for and created in a local context.[40] On a broader level, it is anticipated that mandatory ESG disclosures, commencing with state-owned businesses, are likely to be introduced to the Mainland.[41]

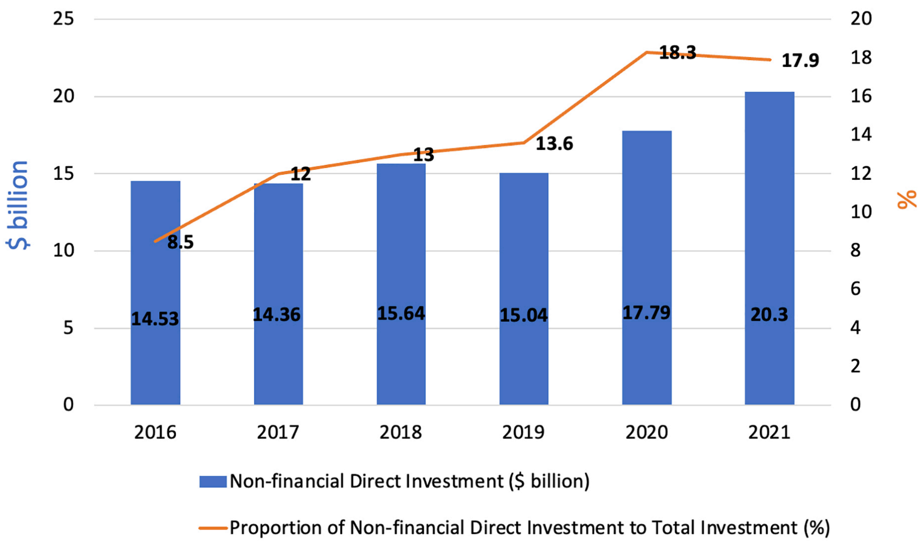

Figure 3: Chinese non-financial direct investments in overseas in 2016-2021[42]

34 Hutchinson, G., Ding, A., and Roberts, A.. 'China's New ESG Disclosure Standards.' Linklaters, 26 May 2022. https://sustainablefutures.linklaters.com//post/102hpkx/chinas-new-esg-disclosure-standards.

35 Ibid.

36 SynTao. 'ESG Disclosure Guidelines for Overseas Investment of Chinese Enterprises (2022)', 6 December 2022.

37 Susanne J.H., Wei N.S., and Mark, U. 'China Issues First ESG Disclosure Guidance: International Guidelines with Chinese Characteristics.' Eye on ESG, 17 August 2022. www.eyeonesg.com/2022/08/china-issues-first-esg-disclosure-guidance-international-guidelines-with-chinese-characteristics/.

38 Mayer Brown. 'China Issues First ESG Disclosure Guidance: International Guidelines with Chinese Characteristics | Perspectives & Events,' 7 July 2023. www.mayerbrown.com/en/perspectives-events/blogs/2022/08/china-issues-first-esg-disclosure-guidance-international-guidelines-with-chinese-characteristics.

39 South China Morning Post. 'The Goal of ESG Standards with Chinese Characteristics Is Facing Challenges.' 26 September 2022. www.scmp.com/business/china-business/article/3193743/chinas-goal-esg-standards-chinese-characteristics-faces.

40 South China Morning Post. 'China's New ESG Disclosure Guidelines Need a Forward-Looking Slant.' 11 July 2022. www.scmp.com/business/china-business/article/3184859/chinas-new-esg-disclosure-guidelines-need-forward-looking.

41 The Standard. 'Hong Kong Stock Exchange to Tighten Climate Disclosure Rules.' 1 July 2023. www.thestandard.com.hk/breaking-news/section/4/202685/Hong-Kong-Stock-Exchange-to-tighten-climate-disclosure-rules-%C2%A0.

42 SynTao. 'ESG Disclosure Guidelines for Overseas Investment of Chinese Enterprises (2022)', 6 December 2022.

Europe

The European Council authorised the adoption of the Corporate Sustainability Reporting Directive (CSRD) on 28 November 2022, which became operative on 5 January 2023.[43] The CSRD mandates reporting and disclosure of data on large enterprises' societal and environmental impact, as well as external sustainability concerns affecting their operation.[44] Furthermore, the Non-Financial Reporting Directive (2014/95/EU)[45] is amended by the CSRD, which additionally establishes more specific, mandatory sustainability reporting standards. These standards involve qualitative and quantitative data on environmental, social, and governance issues, including climate change.[46] Therefore, both large corporations and listed small and medium-sized enterprises (SMEs) must submit reports on sustainability and governance issues.[47]

The EU has initiated significant progress towards a sustainable economy via upgraded corporate accountability with the shift from 'non-financial disclosures' to 'sustainability disclosure',[48] which reconciles financial and sustainability reporting. According to estimates, the new regulations will apply to 50,000 enterprises.[49] Companies will need to evaluate their disclosing strategies in light of the CSRD and create systems for gathering pertinent, verifiable data, as well as disclosing relevant details in an unambiguous, efficient manner supported by independent verification.

Critiques of the Emphasis on Climate Change Disclosure

In the past decade, the subject of climate change has been receiving greater prominence, with plenty of organisations and governments stressing the urgency of climate change disclosure. Yet, some doubt that the world has indeed become overly focused on climate change disclosure.

Neglecting Other ESG Goals

To accomplish business sustainability by placing a disproportionate spotlight on climate change disclosure as a countermeasure to environmental threats, companies may overlook other important ESG issues such as labour practices, supply chain management, and diversity and inclusion.

By way of example, Nestlé[50] places an overabundance of weight on how climate-related hazards might impact its strategy and future business forecasts, with its climate change disclosure setting up in line with the Task Force on Climate-Related Financial Disclosures (TCFD)'s guidelines.[51] As such, the comprehensive disclosure covers its governance structures, strategy and risk management, assessment of resilience, metrics and targets.[52] Likewise, Nestlé adopted the Net Zero Roadmap, wherein the goal is to achieve zero in-scope emissions by 2050.[53] Furthermore, Nestlé undertook a key step towards integrating climate-based thinking throughout its business in 2022 by including climate assessments in its Strategic Business Units' and Globally Managed Businesses' yearly strategic portfolio evaluations.[54]

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43 Green Finance Platform. 'Non-Financial Reporting Directive (NFRD) - Directive 2014/95/EU and the Proposal for a Corporate Sustainability Reporting Directive (CSRD),' 1 January 2021. www.greenfinanceplatform.org/policies-and-regulations/non-financial-reporting-directive-nfrd-directive-201495eu-and-proposal#:~:text=The%20European%20Union%20(EU)%20Directive,of%20employees%2C%20respect%20for%20human.

44 Norton Rose Fulbright. 'Short Update: The European Council Adopts the Corporate Sustainability Reporting Directive (CSRD),' n.d. www.nortonrosefulbright.com/en/knowledge/publications/2191f8f3/short-update-the-european-council-adopts-the-corporate-sustainability-reporting-directive-csrd.

45 'Directive 2014/95/Eu of the European Parliament and of the Council of 22 October 2014.' *Official Journal of the European Union*, 15 November 2015. https://Eur-Lex.Europa.Eu/Legal-Content/EN/TXT/PDF/?uri=CELEX:32014L0095.

46 n42.

47 FMBBVA. 'Non-Financial Reporting Directive - Progreso.' *Progreso*, 3 March 2016. www.fundacionmicrofinanzasbbva.org/revistaprogreso/en/non-financial-reporting-directive/.

48 European Commission. 'Corporate Sustainability Reporting,' 9 June 2023. https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en.

49 IFLR. 'From the NFRD to the CSRD: Long Story Short,' 4 January 2022. www.iflr.com/article/2a647e1ubbp4gen3p7lz5from-the-nfrd-to-the-csrd-long-story-short.

50 A Swiss multinational food and beverage company and one of the largest food companies in the world.

51 TCFD is a global initiative launched by the Financial Stability Board in 2015 to encourage companies and financial institutions to disclose information about the risks and opportunities related to climate change.

52 'Nestlé's 2022 Climate Risk and Impact Report.' *Nestlé S.A.*, 2022. www.Nestle.Com/Sites/Default/Files/2023-03/2022-Tcfd-Report.Pdf.

53 Nestlé Global. 'Our Road to Net Zero,' n.d. www.nestle.com/sustainability/climate-change/zero-environmental-impact.

54 n49.

Despite endeavouring to minimising its carbon footprint to meet climate change disclosure requirements, it has been investing considerably fewer hours and resources on other equally vital ESG issues like health risks and human rights abuses. The International Labour Rights Fund and the courts have filed cases against Nestlé spanning from 2005 to 2021, asserting that children were trafficked, forced into slavery, and subjected to regular beatings on a cocoa plantation.[55] In the 2008 Chinese milk scandal,[56] Nestlé products were contaminated with melamine, a chemical that is illegally added to food items to boost their apparent protein content, resulting in the deaths of six infants and the hospitalisation of 860 others with kidney damage. Therefore, corporations' overzealous focus on climate change disclosures and disregard for the complete spectrum of ESG risks could result in a distorted emphasis on these topics, undermining their long-term sustainability and performance.

Exploiting the Benefits of Climate Change Disclosures

Emphasising climate change disclosures encourages enterprises to differentiate themselves out from rivals due to their commitment to ethical principles, while simultaneously providing shareholders genuine benefits in the form of cost savings through energy conservation measures. Further, the growing consensus is that businesses should take the initiative to integrate sustainable practices into their everyday operations, otherwise they face the risk of ruining their reputation and incurring legal ramifications based on regulations particular to their industry. Due to the potential for value generation and reputational enhancement through green initiatives such as the issuance of green bonds[57] or investing in renewable energy,[58] businesses are now beginning to devote significant resources to these efforts. Hence, there may be a surplus 'green economy' developed in satisfying the requirements for climate change disclosure.[59] For instance, an entity may aggressively engage in renewable energy to raise its environmental profile and meet climate change disclosure standards, but due to resource constraints, it must disregard ESG issues like data privacy. This could give rise to a loss of trust and reputational harm, which will eventually impact long-term sustainability and performance. In this regard, some contend that the world is indeed excessively preoccupied with climate change disclosures.

Challenges Faced if the World is Too Focused on Climate Change Disclosure

Assuming the proposition that the world is too focused on climate change disclosure is justified, such excessive focus may present the following challenges.

Hurdles for SMEs

One of the obstacles is that the efficacy of climate change disclosure as a whole may be hindered by SMEs restricted access to resources. Due to their lack of resources and knowledge, SMEs may have difficulties in adhering to the standards for climate change disclosure. In particular, 350 SMEs from 40 countries and more than 20 different industries took part in the 2023 study by the SME Climate Hub.[60] Insufficient funding, according to 55% of respondents, is a significant impediment to putting climate-related policies into action.[61] Nearly half of those surveyed indicated that they would require up to US$100,000 to reach net zero.[62] Extra hurdles, as cited by 58% of respondents, included a lack of skills, resources, and knowledge.[63] As a result, they may not be able to provide accurate and complete disclosures, which can impact the overall effectiveness of climate change disclosure frameworks across the board.

55 Hurley, L. 'U.S. Supreme Court Rules for Nestle, Cargill over Slavery Lawsuit.' Reuters, 17 June 2021. www.reuters.com/business/us-supreme-court-rules-nestle-cargill-over-slavery-lawsuit-2021-06-17/.

56 Huang, Y. 'The 2008 Milk Scandal Revisited.' Forbes, 16 July 2014. www.forbes.com/sites/yanzhonghuang/2014/07/16/the-2008-milk-scandal-revisited/.

57 World Bank. 'Climate Explainer: Green Bonds,' n.d. www.worldbank.org/en/news/feature/2021/12/08/what-you-need-to-know-about-ifc-s-green-bonds.

58 International Renewable Energy Agency. 'Investments in Renewables Reached Record High, But Need Massive Increase and More Equitable Distribution,' 22 February 2023. www.irena.org/News/pressreleases/2023/Feb/Investments-in-Renewables-Reached-Record-High-But-Need-Massive-Increase-More-Equitable-Distribution.

59 Hong Kong Monetary Authority. 'The Green and Sustainable Finance Cross-Agency Steering Group Welcomes the Publication of the International Sustainability Standards Board Proposed Standards for Public Consultation.' 31 March 2022. www.hkma.gov.hk/eng/news-and-media/press-releases/2022/03/20220331-10/.

60 SME Climate Hub. 'SME Climate Hub 2023 Survey,' 2023. https://smeclimatehub.org/wp-content/uploads/2023/02/SME-Climate-Hub-Survey-2023.pdf.

61 Ibid, 6.

62 Ibid, 7.

63 Ibid.

Diversion of Resources

Another challenge that can arise from a single-minded concentration on climate change disclosure is the potential weakening of coordination and corporate sustainability. Companies may divert resources from other important corporate governance matters, such as supply chain management and labour practices, in order to focus on climate change disclosure.[64] This can result in a lack of coordination and integration of ESG issues, which could eventually render it tougher for businesses to be sustainable. The example of Nestlé presented above illustrates a lack of coordination and integration of corporate governance issues, which may ultimately jeopardise the sustainability of the business in its entirety.

Upsurge of Greenwashing

In terms of corporate marketing, climate change disclosuremay be treated as a means to raise capital, such as through the issuance of green bonds. While this can be an important step in mitigating climate change, this may result in the practice of 'greenwashing',[65] in which businesses make climate change disclosures lack content and insightful analysis. In Europe, the number of greenwashing controversies has steadily increased between 2020 and 2021 (see **Figure 4**).[66] The Volkswagen 'Clean Diesel' campaign[67] is one specific instance of greenwashing. Volkswagen promoted its diesel vehicles as being ecologically benign at the beginning of the 2000s, asserting that they had cutting-edge pollution control systems that reduced hazardous emissions.[68] The US Environmental Protection Agency, however, discovered in 2015 that Volkswagen installed software on its diesel vehicles that allowed them to pass emissions tests and conform to disclosure rules regarding climate change.[69] In actuality, Volkswagen vehicles emitted up to 40 times the legal limit of the hazardous pollutant nitrogen oxide.[70] Volkswagen incurred tremendous reputational damage as a result of the incident, and the automaker ultimately had to pay AU$125 million (US$83.4 million) in fines and customer compensation.[71] The 'Clean Diesel' campaign was revealed to be a case of greenwashing, as Volkswagen had deliberately misled customers about the environmental impact of its diesel cars to make it look 'environmentally friendly', while providing incomplete or inaccurate climate change disclosures on its risk. The prevalence of greenwashing caused by excessive focus on climate change disclosures thereby creates an unhealthy corporate climate on a global scale.

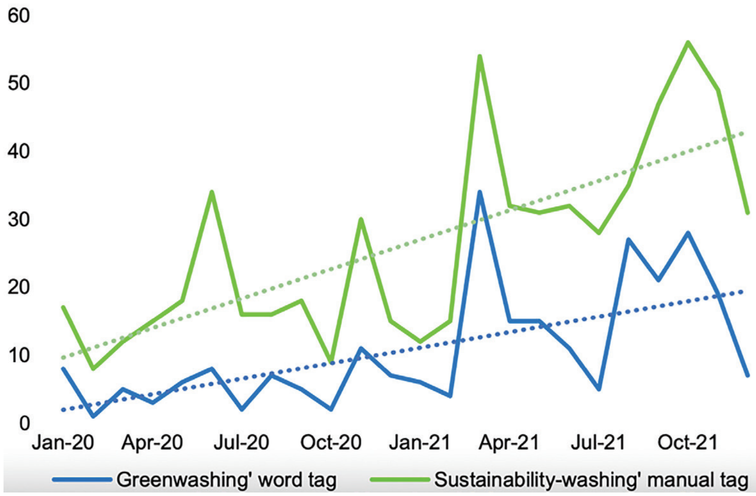

Figure 4: Monthly number of greenwashing in STOXX Europe 600 Firms[72]

64 Global Legal Group. 'Environmental, Social, & Governance Laws and Regulations Report 2023 Hong Kong.' International Comparative Legal Guides International Business Reports, n.d. https://iclg.com/practice-areas/environmental-social-and-governance-law/hong-kong.

65 Fidelity International. 'What is Greenwashing,' n.d. www.fidelity.com.hk/en/start-investing/learn-about-investing/esg-investing/what-is-greenwashing.

66 European Securities and Markets Authority. 'Progress Report on Greenwashing,' 31 May 2023. www.esma.europa.eu/sites/default/files/2023-06/ESMA30-1668416927-2498_Progress_Report_ESMA_response_to_COM_RfI_on_greenwashing_risks.pdf.

67 Federal Trade Commission. 'FTC Charges Volkswagen Deceived Consumers with Its 'Clean Diesel' Campaign,' 29 March 2016. www.ftc.gov/news-events/news/press-releases/2016/03/ftc-charges-volkswagen-deceived-consumers-its-clean-diesel-campaign.

68 Ibid.

69 Adams, M. 'High Court Decision on $125 Million Fine for Volkswagen Is a Warning to All Greenwashers.' The Conversation, 12 November 2021. https://theconversation.com/high-court-decision-on-125-million-fine-for-volkswagen-is-a-warning-to-all-greenwashers-171733.

70 Australian Competition and Consumer Commission. 'High Court Denies Volkswagen Leave to Appeal $125 Million Penalty,' 11 November 2021. www.accc.gov.au/media-release/high-court-denies-volkswagen-leave-to-appeal-125-million-penalty.

71 Ibid.

72 STOXX Europe 600 is a widely recognized benchmark for European equities and is used by investors to track the performance of the European stock market.

Justifications for Upholding our Stance

With the widespread adoption of extensive climate change disclosure, the issue has seemingly become overly fixated. Yet, this proposition is countered by the following arguments.

Climate Change Disclosure as One of the Green Measures

Climate change disclosure is not the sole approach to achieving a green economy under ESG framework. Other ways the world has emphasized include: (i) the imposition of carbon tax; (ii) investing in energy transition; and (iii) signing of cross-border agreements.

Carbon pricing is an effective economic signal to: (i) hold businesses accountable for their emissions; and (ii) encourage consumers to shift away from carbon-intensive goods and services, underpinning climate mitigation efforts.[73] Singapore, Finland, Norway, and Sweden are some jurisdictions where a carbon tax has been implemented.[74] Take Singapore as an illustration. The Carbon Pricing Act was amended on 7 March 2023 to progressively increase carbon tax rates.[75] Currently, 80% of the total national GHG emissions from around 50 facilities in the power, water, waste, and manufacturing sectors are covered by the carbon tax.[76] It is undisputed that carbon tax plays a critical role in: (i) encouraging companies to adopt cleaner practices and reduce carbon emissions to cut costs; and (ii) promoting sustainable customer behaviour by increasing the cost of carbon-intensive goods and services. Thus, carbon tax appears to be given much weight in forming part of a comprehensive suite of mitigation measures to support the global transition to a low-carbon economy.

Very often, the driving force behind business efforts is the government which takes a leading role in fostering clean energy manufacturing by creating new opportunities to innovate. The Mainland, the biggest emitter of GHG in 2021,[77] topped the world in clean energy investment in 2022.[78] With approximately half of the world's low carbon spending taking place in the Mainland, the country spent US$546 billion in 2022 on investments including electric vehicles, batteries, and renewables.[79] Particularly, much capital was allocated to developing renewables. In 2022, coal was used to generate more than half of the national electricity,[80] causing coal burning to become the major cause of global warming in the Mainland.[81] To alleviate reliance on coal, the country's finance ministry has set the renewable power subsidy at US$607.26 million, which was allocated to wind farms, solar power stations, and biomass power generators.[82] Therefore, investment in the energy transition is also at the heart of global green measures.

Intergovernmental collaboration is also of great significance to cultivating a global resilient corporate market amid the climate crisis. The Singapore-Australia Green Economy Agreement (GEA) signed by Trade Ministers on 18 October 2022 is the world's first agreement combining trade, economic, and environmental objectives.[83] By reducing barriers to the trade in green goods and services, GEA results in higher availability of environmentally friendly goods and services in markets of Singapore and Australia.[84] GEA also boosts regulations and benchmarks that: (a) facilitate cross-border green activities; and (b) support the advancement and commercialisation of green technologies.[85] This could: (i) create favourable conditions for businesses and research institutes to collaborate with foreign partners; (ii) explore overseas investment opportunities;

73 National Climate Change Secretariat. 'Carbon Tax.' Accessed 4 July 2023. www.nccs.gov.sg/singapores-climate-action/mitigation-efforts/carbontax/.
74 Ibid.
75 Leck, A., R. J. Lim, K. Chia, and A. Toh. 'Singapore: Carbon Pricing (Amendment) Act 2022 Comes into Force on 7 March 2023.' Baker McKenzie, 28 March 2023. www.globalcompliancenews.com/2023/03/28/https-insightplus-bakermckenzie-com-bm-energy-mining-infrastructure_1-singapore-carbon-pricing-amendment-act-2022-comes-into-force-on-7-march-2023_03242023/.
76 Ibid.
77 Tiseo, I. 'Largest Global Emitters of Carbon Dioxide 2021, by Country.' Statista, 16 June 2023. www.statista.com/statistics/271748/the-largest-emitters-of-co2-in-the-world/.
78 Schonhardt, S. 'China Invests $546 Billion in Clean Energy, Far Surpassing the U.S.' Scientific American, 30 January 2023. www.scientificamerican.com/article/china-invests-546-billion-in-clean-energy-far-surpassing-the-u-s/.
79 Ibid.
80 Hayley, A. 'China Leans on Coal amid Energy Security Push.' *Reuters*, 6 March 2023. www.reuters.com/business/energy/china-underlines-key-role-coal-amid-energy-security-drive-2023-03-05/.
81 'Greenhouse Gas Emissions by China.' In *Wikipedia*. Accessed 4 July 2023. https://en.wikipedia.org/wiki/Greenhouse_gas_emissions_by_China.
82 Reuters. 'China Sets 2022 Renewable Power Subsidy at $607 Mln,' 16 November 2021. www.reuters.com/business/energy/china-sets-2022-renewable-power-subsidy-607-mln-2021-11-16/.
83 Australian Government, Department of Foreign Affairs and Trade. 'Singapore-Australia Green Economy Agreement: Propelling Our Sustainable Future.' Accessed 4 July 2023. www.dfat.gov.au/geo/singapore/singapore-australia-green-economy-agreement/singapore-australia-green-economy-agreement-propelling-our-sustainable-future.
84 Green Economy Agreement. 'Benefits of GEA.' Accessed 4 July 2023. www.gea.gov.sg/benefits/.
85 Ibid.

and (iii) implement innovative technologies on a greater scale.[86] The binding cross-border agreements could link like-minded international partners to: (a) contributeto the global disclosure on the environment and the economy; and (b) enhance global capacity to address climate change.

Nature of Climate Change Disclosure Justifies Increased Resource Allocation

Considering the pressing nature of climate risks and the significant benefits arising from climate change disclosure on social, political, and environmental aspects, allocating more resources towards climate change disclosure is a rational and proportional response.

Climate change is an imperative and irreversible crisis that necessitates immediate global actions. According to a report by the Intergovernmental Panel on Climate Change in August 2021, the current rate of global warming has been described as a 'code red for humanity'.[87] Despite current commitments to climate mitigation, global GHG emissions are projected to drop by only 1% by 2030.[88] It will fall short of the United Nations (UN) Net Zero Coalition's target of 45% reduction by 2030 to limit global warming to 1.5°C, thus achieving the goals of the 2015 Paris Agreement will be beyond reach.[89] The data therefore suggest that there is a need for rapid and deep reductions in GHG emissions in the upcoming decades.

As the UN stated that the transition to a net-zero global economy requires a minimum of US$90 trillion, the capital market will play a crucial role in attracting related large-scale investments.[90] And climate change disclosure significantly contributes to the promotion of green and sustainable finance in the global investment market, benefiting: (i) businesses; (ii) investors; and (iii) geopolitical stability in the long term.

First, climate scenario analysis helps businesses to facilitate risk management or even foresee business opportunities. The 2°C scenario, a widely recognised threshold for limiting the growth of climate change,[91] helps businesses effectively to identify and evaluate the potential impacts of climate risks on their business performance under a reasonable diversity of possible future climate states.[92] This assists companies in mapping out strategic and financial plans resilient to climate change. The analysis could also project future business opportunities in emerging green markets, including but not limited to waste recycling, energy storage, and green buildings.[93] These markets are foreseen to be worth US$10.3 trillion to the global economy by 2050.[94] Second, transparency and accountability in climate-related reporting can boost companies' reputations by demonstrating their commitment to sustainability and responsible business practices. Aside from attracting more capital from investors, such an approach helps retain employees and business partners who are concerned about environmental issues. Third, by providing clear and consistent climate-related data, climate change disclosure enables investors to make more informed decisions about where to allocate their capital. This allows investors to assess and compare different companies' financial exposure and risk management strategies in the long run, leading to more effective investment decisions. Fourth, climate change disclosure likely reduces geopolitical conflict. By building a common understanding of the challenges and opportunities associated with climate risks, different corporate sectors and countries can work hand in hand to address climate issues on a global scale. This likely reduces disagreements and conflicts that may arise due to differing priorities and perspectives, thus promoting a more sustainable global economy.

Climate Change Disclosure is in its Infancy

Despite gaining increasing attention in the business world, climate change disclosure is still in its early stage of development, regardless of whether it is in developed, developing or underdeveloped jurisdictions. The following demonstrates that achieving a sustainable global economy with the use of climate change disclosure will be a gradual and long-term process.

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86 Ibid.
87 HKEX. 'Green & Sustainable Finance From Vision to Market Practice.' Accessed 5 July 2023. www.hkex.com.hk/-/media/C3548A6915D74EDBB0AA4B90F658E274.ashx.
88 Ibid.
89 Ibid.
90 Ibid.
91 S&P Global. 'What's the Deal with the 2-Degree Scenario?,' 25 February 2020. www.spglobal.com/en/research-insights/articles/what-s-the-deal-with-the-2-degree-scenario.
92 HKEX. 'Reporting on TCFD Recommendations Guidance on Climate Disclosures,' November 2021. www.hkex.com.hk/-/media/HKEX-Market/Listing/Rules-and-Guidance/Environmental-Social-and-Governance/Exchanges-guidance-materials-on-ESG/guidance_climate_disclosures.pdf.
93 Qiang, C., A. Saurav, and B. Viney. 'Global Investors Shift Focus to Sustainability amid Push for a Green Recovery.' World Bank Blogs, 15 June 2021. https://blogs.worldbank.org/psd/global-investors-shift-focus-sustainability-amid-push-green-recovery.
94 Portala, J. 'Green Industries Could Be Worth $10.3 Trln to Economy by 2050 - Study.' Reuters, 11 January 2023. www.reuters.com/business/sustainable-business/green-industries-could-be-worth-103-trln-economy-by-2050-study-2023-01-10/.

While well-developed jurisdictions are stepping forward to bring the city-state in line with global standards, the scope of mandatory climate change disclosure remains limited since it only applies to certain sectors or companies. The UK, as the first G20 country to mandate climate change disclosure, only requires Britain's largest businesses to disclose climate-related financial information commencing from April 2022.[95] Similar case occurs in HK, Australia, and Singapore. Starting from January 2024, mandatory climate change disclosure will apply to all listed companies in HK,[96] while in Australia, large listed entities and large financial institutions will be required to disclose climate risks from the 2024/2025 financial year.[97] In Singapore, only listed businesses in the finance, agriculture, energy, materials, and transportation industries are required to prove full climate disclosures at present.[98] And listed companies in other industries must follow the 'comply or explain' approach.[99] Nonetheless, it is worth noting that Singapore aims to make climate change disclosure mandatory for unlisted companies as well by fiscal 2030, as announced by the Sustainability Reporting Advisory Committee on 6 July 2023.[100]

With fewer affluent resources and capital, underprivileged countries will likely be more vulnerable to the impacts of climate change as they have less capacity to adapt and mitigate climate risks. Yet, the coverage of climate change disclosure is even narrower there compared to wealthier countries. For example in 2022, the Securities and Exchange Board of India introduced mandatory climate change disclosure under the new Business Responsibility and Sustainability Report, applying only to the top 1,000 listed companies.[101] Whereas, in South Africa, though the government encourages businesses to make climate change disclosure in line with the TCFD framework, it has not made TCFD reporting mandatory.[102] The above suggests that there is still room and potential for uniting the pace of developing a comprehensive climate change disclosure across the globe.

Besides, notwithstanding more companies have taken part in climate change disclosure worldwide, the quality of the reporting remains a major concern. The fourth EY Global Climate Risk Barometer revealed that of the corporate reports analysed, while the score for coverage of climate change disclosure was 84% in 2022, the average score for quality was merely 44%.[103] The wide gap between coverage and quality implies that some companies are not providing useful disclosures, or even practising 'greenwashing' by making false disclosure as aforementioned. This indicates that climate change disclosure is still in an immature stage at present, especially in terms of lacking scrutiny regarding the quality of reporting.

Future Direction

Call for Continued Focus

In response to mounting pressure from investors, governments, and other stakeholders to prioritize sustainability, organizations should inevitably continue to place a strong focus on climate change disclosures. As a result of heightened scrutiny, businesses are now more motivated to put responsible practices first when making decisions about operations and expenditures.[104] Regulation and policy should nonetheless continue to drive the incorporation of climate change disclosure and ESG into corporate strategy.[105] Recommended climate change disclosure contents may be adopted by organizations, in the framework of governance, strategy, risk management, as well as metrics and targets as introduced in Section 2C.

95 GOV. UK. 'UK to Enshrine Mandatory Climate Disclosures for Largest Companies in Law,' 29 October 2021. www.gov.uk/government/news/uk-to-enshrine-mandatory-climate-disclosures-for-largest-companies-in-law.
96 n24.
97 Jones Day. 'Incoming: Mandatory Climate Risk Disclosures in Australia,' February 2023. www.jonesday.com/en/insights/2023/02/incoming-mandatory-climate-risk-disclosures-in-australia.
98 Suruga, T. 'Singapore to Require Climate Reporting by Unlisted Companies.' Nikkei Asia, 6 July 2023. https://asia.nikkei.com/Spotlight/Environment/Climate-Change/Singapore-to-require-climate-reporting-by-unlisted-companies.
99 Ibid.
100 Ibid.
101 CDP. 'Disclosure: Imperative For A Sustainable India Cdp India Disclosure Report 2021.' March 2022. https://cdn.cdp.net/cdp-production/cms/reports/documents/000/006/164/original/CDP_AnnualDisclosureReport2021_V7.pdf?1663682392
102 Williams, S. 'TCFD Reporting in the Middle East and Africa.' Marsh, 2 February 2023. www.marsh.com/zm/risks/climate-change-sustainability/insights/tcfd-reporting-in-mea.html.
103 Bell, M. 'When Will Climate Disclosures Start to Impact Decarbonization?' EY, 27 September 2022. www.ey.com/en_gl/climate-change-sustainability-services/risk-barometer-survey-2022.
104 Deloitte Insights. 'Tectonic Shifts: How ESG Is Changing Business, Moving Markets, and Driving Regulation,' 29 October 2021. www2.deloitte.com/us/en/insights/topics/strategy/esg-disclosure-regulation.html.
105 NACD BoardTalk. 'Climate Disclosure and the Role of the Board,' 21 September 2020.

Research and development (R&D) teams may further play an important role in retaining industry's focus on climate change disclosure through advancing sustainability practices.[106] For example, R&D teams in automotive companies can develop electric or hybrid vehicles that reduce greenhouse gas emissions,[107] while those in home appliance companies can develop energy-efficient products that reduce energy consumption.[108] R&D teams may also collaborate with external stakeholders such as universities and research institutions, to develop new solutions to environmental challenges. Companies may lessen their environmental effect while offering customers more sustainable options through developing these products. As a consequence, businesses are able to disclose more precise and in-depth information in their climate change disclosures, thus propelling such disclosure practices forward.

Strike a Balance

As justified above, the world is not overly concerned with climate change disclosure. Besides, there are adequate existing resolutions to prevent any over-emphasis. Several regulatory bodies around the world, as identified in Section 2A, have established frameworks and guidelines for climate change disclosures. It should be noted that these regulatory bodies not only provide regional and global frameworks for companies to report on climate change sustainability-related risks and opportunities, they also work to strike a balance between addressing climate change and addressing other crucial ESG issues in order to steer clear of any overemphasis. For instance, CDP[109] provides businesses with a framework for disclosing their carbon emissions and risks associated with climate change. CDP also addresses additional ESG problems, ranging from supply chain management to water management.[110] Instead of focusing merely on combating climate change, businesses may thoroughly assure that they address a broad spectrum of ESG issues by adhering to the CDP framework.

Steps Ahead

In support of existing resolutions, it is proposed that in the future, shareholder activism will revolutionise how firms approach ESG problems. Corporate disclosure of climate risks has been compelled by shareholder activism,[111] with climate change themes at the top in recent years' shareholder activist campaigns (see Figure 5). This makes it harder for businesses to skirt these issues if they wish to remain competitive. To this end, dialogue with stakeholders can build confidence between companies and their external constituencies while providing invaluable insights into potential improvement areas related to climate change disclosure objectives.

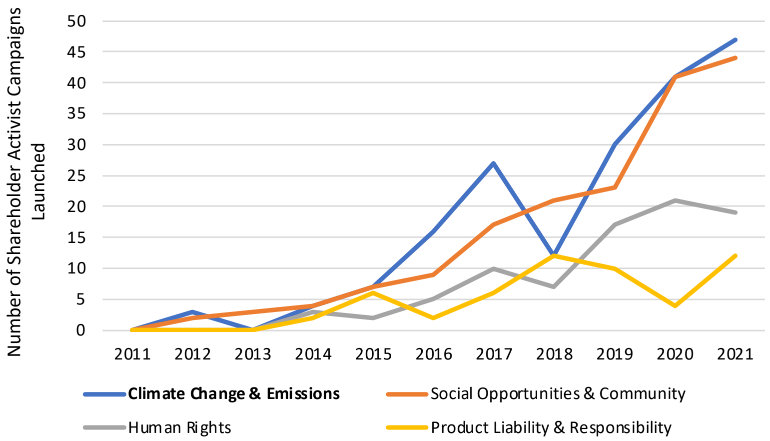

Figure 5: Climate Change has been a Top Theme for E&S Shareholder Activist Campaigns in recent years[112]

106 Emerald Insight. 'Climate Change Disclosure and Sustainable Development Goals (SDGs) of the 2030 Agenda: The Moderating Role of Corporate Governance,' 19 October 2022. www.emerald.com/insight/content/doi/10.1108/JICES-02-2022-0016/full/html?skipTracking=true.

107 ScienceDirect. 'Autonomous Electric Vehicles Can Reduce Carbon Emissions and Air Pollution in Cities,' 8 October 2022. https://doi.org/10.1016/j.trd.2022.103472.

108 Bhutto, M.Y., Liu, X., Soomro Y.A., Ertz, M., and Baeshen, Y. 'Adoption of Energy-Efficient Home Appliances: Extending the Theory of Planned Behavior.' *MDPI*, 29 December 2020.
https://doi.org/10.3390/su13010250.

109 Carbon Disclosure Project. 'Climate Change Data,' 2023.
www.cdp.net/en/climate.

110 Ibid.

111 The Harvard Law School Forum on Corporate Governance. 'Shareholder Activism: Who, What, When, and How?' 7 April 2015.
https://corpgov.law.harvard.edu/2015/04/07/shareholder-activism-who-what-when-and-how/.

112 RBCCM. 'ESG and Shareholder Activism,' n.d. www.rbccm.com/en/insights/story.page?dcr=templatedata/article/insights/data/2022/04/esg_and_shareholder_activism.

On top of that, it is submitted that technological advancements like artificial intelligence (AI), machine learning, blockchain, big data analytics and natural language processing designed specifically for climate change disclosures may enhance the precision and effectiveness of presenting such disclosures. These technologies can also be used to automate the monitoring and reporting of ESG metrics across all levels of an organization's operations to ensure transparency.[113] Furthermore, in terms of satellite data analysis[114] as a cutting-edge technology,[115] a variety of environmental variables, including carbon emissions, deforestation and air quality, may be monitored in real-time. AI algorithms can then be used to analyze financial data and identify companies that are exposed to climate-related risks, such as those in high-carbon industries or those with significant exposure to climate-related disasters. Such information can be used by investors and other stakeholders to make informed decisions about their investments and to encourage companies to improve their sustainability practices. Also, to spot gaps or inconsistent disclosure, natural language processing algorithms can be employed when reviewing ESG reports and other sustainability-related materials.[116] By providing a more comprehensive picture of a company's ESG risks and opportunities, AI may help prevent disproportionate focus on climate change disclosure and ensure a broad range of sustainability issues are being addressed.

Overall, advanced technology has the potential to revolutionize climate change disclosure by providing more comprehensive information on environmental impact, identifying climate-related risks and opportunities, as well as improving sustainability practices to ensure an equitable focus on sustainability in lieu of simply climate change.[117] Nevertheless, it is of utmost importance to make sure that governments and businesses use emerging technology with integrity and responsibility, and that its use in promoting climate change disclosure is transparent and accountable.

Conclusion

As the globe grapples with the ripples of climate change, an immediate response is needed to this worldwide catastrophe.[118] Climate change disclosure serves as an essential tool for companies to address the challenges and opportunities associated with climate change, and to promote transparency and accountability in their operations. With the goal to tackle the global challenge of climate change, which was stated as SDG 13 (Climate Action) in the 2030 Agenda for Sustainable Development,[119] an assortment of regimes is currently available in various jurisdictions, delivering frameworks and guidelines for businesses' climate change disclosures and sustainability practices. In conclusion, it is our stance that the world is not too focused on climate change disclosures, but rather still in its infancy. As we pursue our transition to a more sustainable future, continuing our focus on climate change disclosures with extra support from technological advances is unequivocally a step in the ideal path.

113 Research Square. 'Environmental, Social, and Governance (ESG) and Artificial Intelligence in Finance: State-of-the-Art and Research Takeaways,' n.d. https://doi.org/10.21203/rs.3.rs-2849051/v1.

114 Satellite data analysis refers to the process of interpreting and extracting meaningful information from images and other data collected by satellites orbiting the Earth.

115 ICEYE Oy. 'Satellite Data.' n.d. www.iceye.com/satellite-data.

116 S&P Global. 'How Can AI Help ESG Investing?' 25 February 2020. www.spglobal.com/en/research-insights/articles/how-can-ai-help-esg-investing.

117 Briink, B.H.. 'How Artificial Intelligence Is Enabling ESG Reporting.' ESG Investor, 10 March 2023. www.esginvestor.net/how-artificial-intelligence-is-enabling-esg-reporting/.

118 CARBON, Team IRIS. 'Beyond Financial Performance: How ESG Factors Impact Companies and Investments.' IRIS CARBON®, 3 May 2023. https://iriscarbon.com/beyond-financial-performance-how-esg-factors-impact-companies-and-investments/.

119 United Nations. 'Transforming Our World: The 2030 Agenda for Sustainable Development | Department of Economic and Social Affairs,' n.d. https://sdgs.un.org/2030agenda.

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First runner-up

Huey Lee and Chloe Lee

The University of Hong Kong, Bachelor of Business Administration in International Business and Global Management, Bachelor of Social Science (Government and Laws) & Bachelor of Laws

Introduction

Climate change disclosures covering data like greenhouse gas ('GHG') emissions, despite only part of the environmental ('E') component of Environmental, Social and Governance ('ESG') reporting regime, currently assume a central, if not the most critical, spotlight in the whole regime. Indeed, much of the growth of the regime has been driven by responses to climate change. Given the far-reaching implications of climate change, some critics have advocated for unbundling the E component from the social ('S') and governance ('G') components of ESG reporting and focusing solely on climate change disclosures in E disclosures,[1] justifying their stance with the urgency of climate change and measurement and comparability problems of the reporting regime.[2] On the other hand, some criticises that the regime overemphasises climate change and underestimates the importance of other disclosures.

However, little scholarly attention is paid to reflect on the design of the regime, leaving the major arguments relied on by critics being rather taken for granted. Most academic discussion on ESG reporting is focused on three themes: the development and way forward for

1 Swasti Gupta-Mukherjee, 'Climate Action Is Too Big for ESG Mandates,' *Standford* Social Innovation Review, September 29, 2020, www.ssir.org/articles/entry/climate_action_is_too_big_for_esg_mandates.

2 Leaders, 'ESG should be boiled down to one simple measure: emissions,' *The Economist*, July 23, 2022, www.economist.com/leaders/2022/07/21/esg-should-be-boiled-down-to-one-simple-measure-emissions.

ESG reporting,[3] relationship between ESG reporting and corporate performance,[4] or testing relevant theories.[5] This paper situates itself within the broader context of ESG reporting and the debate on whether the regime's present focus on climate change disclosures is justifiable. Aiming to further the debate with a systematic and quantitative approach, it argues that the focus on climate change disclosures stems from structural, historical and practical causes across the stakeholder chain, involving standard-setters, regulators, reporters, investors and the society. The focus is therefore better understood as a matter of priority, not an overfocus.

In what follows, Section 2 covers theories that shed light on latter sections. Section 3 reviews the development of ESG and climate change disclosures. Section 4 examines why ESG reporting focuses on climate change disclosures by linking oft-repeated justifications with scholarly findings and theories. Section 5 closes with a call for continual improvements and more standardisation.

Theoretical Background

Stakeholder and Legitimacy Theories

ESG reporting gained traction since the early 2000s as investors and a broad range of other stakeholders demand from corporates the disclosure of non-financial information beyond what is traditionally disclosed in financial statements,[6] making the stakeholder theory a mainstream theory. It stresses that corporates must address the needs of stakeholders that influence, and are influenced by its operation, including investors, consumers, regulators and the wider society,[7] and that their ability to manage stakeholder relationships determines long-term business value.[8] Corporates thus adjust their strategies to enhance their long-term value to stakeholders,[9] including by engaging in ESG reporting.

Expanding on the stakeholder theory, the legitimacy theory argues that corporates need social acceptance to legitimise their operations and survive. They must, therefore, convince stakeholders that their operations conform to societal norms and contribute to social value. ESG reporting is a method to gain such legitimacy.[10]

Shareholder/Agency Theory

Instead of focusing on external stakeholders, the shareholder theory proposes that corporates aim to maximise profits for shareholders by maintaining a positive value to investors in the long-term.[11] Its core is the agency theory, which maintains that moral hazards occur in the presence of information asymmetries: corporates, the agent, which have more information on their operations, can choose what to disclose to their shareholders, the principal.[12] Accordingly, even though ESG reporting provides additional transparency to corporates' future risks and opportunities, which should increase investors' confidence, corporates tend to manipulate their performance evaluation by selectively disclosing and withholding information in reporting practices.[13]

3 For examples, see: Satyajit Bose, 'Evolution of ESG Reporting Frameworks,' in *Values at Work: Sustainable Investing and ESG Reporting*, ed Daniel Esty and Todd Cort (Cham: Palgrave Macmillan, 2020), 13–33, https://doi.org/10.1007/978-3-030-55613-6_2; Robert Kaplan and Karthik Ramanna, 'How to Fix ESG Reporting,' (Working Paper No 22-005, Accounting & Management Unit, Harvard Business School, Massachusetts, July 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3900146; Virginia Harper Ho, 'Modernizing ESG Disclosure,' University of Illinois Law Review, no 1 (2022): 277–356, https://ssrn.com/abstract=3845145; Monica Singhania and Neha Saini, 'Institutional framework of ESG disclosures: comparative analysis of developed and developing countries,' *Journal of Sustainable Finance & Investment* 13, no 1 (2023): 516–559, https://doi.org/10.1080/20430795.2021.1964810.

4 For examples, see: Christopher Wickert, Andreas Georg Scherer and Laura Spence, 'Walking and Talking Corporate Social Responsibility: Implications of Firm Size and Organizational Cost,' *Journal of Management Studies* 53, no 7 (2016): 1169–1196, https://doi.org/10.1111/joms.12209; Akrum Helfaya, Rebecca Morris and Ahmed Aboud, 'Investigating the Factors That Determine the ESG Disclosure Practices in Europe,' Sustainability 15, no 6 (2023): 5508, https://doi.org/10.3390/su15065508.

5 For examples, see: Chitra Sriyani De Silva Lokuwaduge and Kumudini Heenetigala, 'Integrating Environmental, Social and Governance (ESG) Disclosure for a Sustainable Development: An Australian Study,' *Business Strategy and the Environment* 26, no 4 (2017): 438–450, https://doi.org/10.1002/bse.1927; Maha Faisal Alsayegh, Rashidah Abdul Rahman and Saeid Homayoun, 'Corporate Economic, Environmental, and Social Sustainability Performance Transformation through ESG Disclosure,' Sustainability 12, no 9 (2020): 3910, https://doi.org/10.3390/su12093910.

6 Bose, 'Evolution of ESG Reporting,' 14.

7 Edward Freeman and John McVea, 'A Stakeholder Approach to Strategic Management,' in *The Blackwell Handbook of Strategic Management*, ed Michael Hitt, Edward Freeman and Jeffrey Harrison (New Jersey: Blackwell Publishers, 2005), 183–201, https://doi.org/10.1111/b.9780631218616.2006.00007.x.

8 Pieter van Beurden and Tobias Gössling, 'The Worth of Values – A Literature Review on the Relation between Corporate Social and Financial Performance,' Journal of Business Ethics 82, no 2 (2008): 407–424, https://doi.org/10.1007/s10551-008-9894-x.

9 Alsayegh, Rahman and Homayoun, 'Corporate Economic,' 4.

10 Craig Deegan, 'Introduction: The legitimising effect of social and environmental disclosures – a theoretical foundation,' Accounting, Auditing and Accountability Journal 15, no 3 (2002): 282–311, https://doi.org/10.1108/09513570210435852.

11 Michael Jensen and William Meckling, 'Theory of the firm: Managerial behavior, agency costs and ownership structure,' Journal of Financial Economics 3, no 4 (October 1976), 305–360, https://doi.org/10.1016/0304-405X(76)90026-X.

12 Alsayegh, Rahman and Homayoun, 'Corporate Economic,' 3.

13 Ibid.

State of ESG Reporting and Climate Change Disclosures

Gaining of Momentum

The ESG terminology was first introduced in the report 'Who Cares Win: Connecting Financial Markets to a Changing World' published by the United Nations' ('UN') Global Compact Initiative (hereafter the 'WCW Report') in 2004. Aiming to address the insufficient consideration of non-financial issues in financial evaluations,[14] the WCW Report provided a preliminary definition of ESG:–

Jointly endorsed by the International Finance Corporation, World Bank and 23 leading financial institutions including Goldman Sachs and UBS,[16] the WCW Report successfully led the financial services sector to internalise ESG principles and make more comprehensive financial evaluations and investment decisions. More significantly, it has called for stakeholders to contribute towards standards/frameworks for ESG disclosures in asset management, securities brokerage and financial market research functions,[17] setting the groundwork for the development of general corporate ESG reporting standards/frameworks.

Building on the WCW Report, the UN launched the Principles for Responsible Investment ('PRI') in 2006, which consist of six principles on how institutional investors may support sustainable investing. Signatories to the PRI are required to commit themselves to 'incorporate ESG issues into investment analysis and decision-making processes'[18] and in return, they receive practical support to achieve so.[19] Despite only voluntary principles, the PRI have effectively facilitated the emergence of sustainable investing standards by channeling investors' commitment to sustainable investing into portfolio companies' motivation of ESG disclosures[20]: the number of signatories have grown from 63 representing US$6.5 trillion of assets under management ('AUM') at its launch,[21] to 5319 representing US$121 trillion of AUM in December 2022.[22]

Component	Issues
Environment ('E')	Climate change and related risks
	Need to reduce toxic releases and waste
	New regulation expanding the boundaries of environmental liability with regard to products and services
	Increasing pressure by civil society to improve performance, transparency and accountability, leading to reputational risks if not managed properly
	Emerging markets for environmental services and environment-friendly products
Social ('S')	Workplace health and safety
	Community relations
	Human rights issues at company and suppliers' or contractors' premises
	Government and community relations in the context of operations in developing countries
	Increasing pressure by civil society to improve performance, transparency and accountability, leading to reputational risks if not managed properly
Governance ('G')	Board structure and accountability
	Accounting and disclosure practices
	Audit committee structure and independence of auditors
	Executive compensation
	Management of corruption and bribery issues

Table 1: ESG Issues Identified in the WCW Report[15]

14 International Finance Corporation, *Who Cares Wins, 2004–08: Issue Brief*, (Washington, DC: International Finance Corporation, nd), https://documents1.worldbank.org/curated/en/444801491483640669/pdf/113850-BRI-IFC-Breif-whocares-PUBLIC.pdf, 9.

15 United Nations Global Compact, *Who Cares Wins: Connecting Financial Markets to a Changing World*, (New York: United Nations, October 2004), www.unepfi.org/fileadmin/events/2004/stocks/who_cares_wins_global_compact_2004.pdf, 6.

16 International Finance Corporation, *Who Cares Wins*, 2.

17 United Nations Global Compact, *Who Cares Wins*, 32–33.

18 Principle 1 of the PRI, see: 'What are the Principles for Responsible Investment?', About Us, Principles for Responsible Investment, accessed July 2, 2023, www.unpri.org/about-us/what-are-the-principles-for-responsible-investment.

19 'Putting the Principles into practice: Principle 1,' Principles for Responsible Investment, March 1, 2022, www.unpri.org/investment-tools/putting-the-principles-into-practice-principle-1/9583.article.

20 Principles for Responsible Investment, 'What are the Principles.'

21 UBS, 'Is Sustainable Investing Moving Into the Mainstream?', *Harvard Business Review*, November 15, 2019, https://hbr.org/sponsored/2019/11/is-sustainable-investing-moving-into-the-mainstream.

22 Principles for Responsible Investment, *Signatory Update*: October to December 2022, (New York: United Nations Global Compact, December 2022), www.unpri.org/download?ac=18057, 37.

The Paris Agreement and adoption of the 2030 Agenda for Sustained Development by global leaders – which consists of 17 Sustainable Development Goals that cover, inter alia, tackling climate change, poverty, and inequalities[23] – further prompted governments to promote, and corporates to adopt, ESG policies and reporting practices. More recently, COVID-19 further accelerated the momentum of ESG reporting, especially the S and G components. Not only did the reduction of GHG emissions during lockdowns revealed the ability of the world in meeting emission targets, but the pandemic also exposed flaws in the financial system, from supply chains to labour markets and credit liquidity; on top of that, coinciding with the Black Lives Matter movement, social inequalities including access to healthcare were highlighted.[24] Besides leading to almost ten times of funds flowing into ESG investments in 2020 as compared to 2018,[25] stakeholders called for greater transparency in comprehensive ESG information, in addition to climate change-related information.[26]

Professionalism and Standardisation

In response to the popularity of ESG, a handful of reporting standards/frameworks have evolved to assist corporates in organising and presenting such non-financial information consistently to stakeholders.

Before moving on to introducing mainstream standards/frameworks, it should be noted that there are over 2,200 standards/frameworks in the ESG reporting regime.[27] Given most of the standards/frameworks are targeted towards large corporations, more specifically those that are publicly listed,[28] as a matter of practicality, we limit our scope to the three most common standards/frameworks, defined by the percentage of adoption by S&P 500 companies. We thus focus on the Sustainability Accounting Standards Board ('SASB') Standards, Global Reporting Initiative ('GRI') Standards and Task Force on Climate-Related Financial Disclosures ('TCFD') Recommendations, which 90%, 79% and 69% of S&P 500 companies adopted in 2021 respectively.[29]

Among the three standards/frameworks, the GRI was the first in time. Founded in 1997, it published the world's first reporting framework in 2000.[30] In 2016, it transitioned to setting standards for corporates to voluntarily report the most significant external impacts of their operations on 'the economy, environment and people.'[31] Originating from UN dialogues on sustainable development, the GRI Standards' target audience extend beyond investors to include corporates, employees, policymakers, consumers and the general civil society.[32] The current GRI Standards consists of three sets: the Universal Standards that applies to all reporters, Sector Standards that applies to specific sectors and Topic Standards that applies to reporters who find specific topics material to their operations like GHG emissions and workplace health and safety.[33]

In contrast, the SASB Standards targeted at investors by aiming to help corporates to identify sector-specific ESG disclosures that 'are most likely to be useful to investors.'[34] First published by the SASB Foundation in 2011, they are now overseen by the International Sustainability Standards Board ('ISSB') of the International Financial Reporting Standards ('IFRS') Foundation.[35] A defining feature of the SASB Standards is the concept of 'financial materiality,' which urge reporters to focus on disclosures that 'materially impact the financial condition or operating performance.' In other words, they focus on the impacts of ESG risks and opportunities on internal financial performance.[36] Reporters, depending on sector, should disclosure information of five dimensions: the environment, human capital, social capital, business

23 'The Sustainable Development Agenda,' Sustainable Development Goals, United Nations, accessed July 2, 2023, www.un.org/sustainabledevelopment/development-agenda-retired/.
24 *Rebecca Fender et al*, *Future of Sustainability in Investment Management: From Ideas to Reality*, (Virginia: CFA Institute, 2020), www.cfainstitute.org/-/media/documents/survey/future-of-sustainability.ashx, 17.
25 Jon Hale, 'A Broken Record: Flows for U.S. Sustainable Funds Again Reach New Heights,' Morningstar, January 28, 2021, www.morningstar.com/sustainable-investing/broken-record-flows-us-sustainable-funds-again-reach-new-heights.
26 Board of the International Organization of Securities Commission, *Sustainable Finance and the Role of Securities Regulators and IOSCO: Final Report*, (Madrid: International Organization of Securities Commission, April 2020), https://www.iosco.org/library/pubdocs/pdf/IOSCOPD652.pdf, 23.
27 Julie Yamamoto, 'ESG reporting 101: Guide to ESG standards and sustainability frameworks,' *OneTrust*, January 30, 2023, www.onetrust.com/blog/esg-reporting/.
28 Bose, 'Evolution of ESG Reporting,' 20.
29 'S&P 500 ESG Reporting and Assurance Analysis,' CAQ, Resource, last modified June 2023, www.thecaq.org/sp-500-and-esg-reporting.
30 Global Reporting Initiative, 25 *years as the catalyst for a sustainable future: 1997-2022*, (Amsterdam: Global Reporting initiative, September 2022), www.globalreporting.org/media/b15hggfc/gri-25-years-history.pdf, 1.
31 'GRI - Home,' Global Reporting Initiative, accessed July 2, 2023, www.globalreporting.org/.
32 Bose, 'Evolution of ESG Reporting,' 18.
33 Global Reporting Initiative, *A Short Introduction to the GRI Standards*, (Amsterdam: Global Reporting initiative, nd), www.globalreporting.org/media/wtaf14tw/a-short-introduction-to-the-gri-standards.pdf.
34 'About Us,' SASB Standards, accessed July 2, 2023, https://sasb.org/about/.
35 Ibid.
36 Ibid.

model, and innovation and leadership and governance.[37] As of 2023, 77 sector-specific standards have been published, covering 11 industries across, inter alia, consumer goods, extractives and minerals processing, financials and infrastructure.[38]

The TCFD Recommendations differentiate themselves as a climate change-related framework. The TCFD, established in 2015 by the Financial Stability Board, an international body that brings together G20 financial ministers and central banks, aimed to develop a framework for climate change-related financial disclosures. Initiated by the financial sector, the TCFD targets at stakeholders that have a role in the investment chain, ranging from investors on the top, to intermediaries like asset managers and lenders.[39] The Recommendations, published in 2017, evaluate the impacts of climate change-related risks and opportunities on internal financial performance[40] in four thematic areas: governance, strategy, risk management and metrics and targets. Apart from guiding cross-sector general disclosures, it provides specific guidance for the financial sector.[41]

The Focus on Climate Change Disclosures

Standard-setters

Being at the forefront of ESG reporting, global standard-setters have highlighted the urgency for progress on climate change disclosures, leading to developments on the topic before other non-climate change-related ESG disclosures historically. For instance, the GRI was founded in 1997 with the aim of setting 'responsible environmental conduct principles', it only broadened its focus to also S and G components before publishing the first GRI Standards in 2000.[42] Similarly, the ISSB, in designing its emerging IFRS Sustainability Disclosure Standards ('SDS'), 'initially' set its strategic focus on climate change disclosures, citing an 'urgent need for better information about climate-related matters'; contrarily, it decides to only 'work towards meeting information needs of investors' on other ESG matters.[43]

	GRI Standards	SASB Standards	TCFD Recommendations
Year of Publishing	2016 (updated in 2021)	2011	2017
Focus	General ESG	General ESG	Climate change
Target Audience	All stakeholders	Investors	Financial stakeholders
Purpose	Report the company's most significant impacts on the economy, environment and people	Complement financial information for investors to make informed decision	Allow financial stakeholders to assess and price climate change-related risks and opportunities
Focus	External ESG impacts	Internal impact of ESG risks on financial performance	Internal impact of ESG risks on financial performance
What is Reported	All 3 ESG components	All 3 ESG components, grouped into 5 dimensions:– • environment; • human capital; • social capital; • business model and innovation; and • leadership and governance	4 thematic areas:– • governance; • strategy; • risk management; and • metrics and targets

Table 2: Overview of Reporting Standards/Frameworks

37 'Understanding SASB Standards,' Implementation Primer, SASB Standards, accessed July 2, 2023, https://sasb.org/implementation-primer/understanding-sasb-standards/.
38 Ibid.
39 Bose, 'Evolution of ESG Reporting,' 23.
40 Bose, 'Evolution of ESG Reporting,' 21.
41 Task Force on Climate-Related Financial Disclosures, *Final Report: Recommendations of the Task Force on Climate-Related Financial Disclosures*, (New York: Task Force on Climate-Related Financial Disclosures, June 2017), https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf, iii.
42 Global Reporting Initiative, 25 years, 1.
43 IFRS Advisory Council, *Agenda paper 1: Sustainability Reporting*, (London: IFRS Foundation, April 2021), www.ifrs.org/content/dam/ifrs/meetings/2021/april/advisory-council/ap1-sustainability-reporting-april-2021.pdf, 4; In June 2023, the ISSB issued its first two IFRS Sustainability Disclosure Standards, one being general disclosures ('IFRS S1') and one being climate change disclosures ('IFRS S2'). As of July 2023, these Standards are awaiting consultation feedback and are yet to be implemented, see: 'Climate-related Disclosures,' Completed Projects, IFRS Foundation, accessed July 2, 2023, www.ifrs.org/projects/completed-projects/2023/climate-related-disclosures/.

Standard-setters are more focused on climate change disclosures statistically as well. The SASB Standards identify that GHG emissions as a material issue that requires disclosure for over 50% of sectors across its 11 identified industries[44]; whereas the TCFD Recommendations, as suggested by its name, are wholly climate change-related, with certain disclosures overlapping with S and G components.

Regulators

Regulators like governments and stock exchanges have developed their own rules and/or guidelines to support corporate ESG reporting. By far, 69 of the world's largest stock exchanges,[45] including the New York Stock Exchange and Nasdaq, have encouraged listed companies to practise ESG reporting through providing disclosure guides. An increasing number of stock exchanges have also mandated ESG reporting. For instance, the Hong Kong Stock Exchange ('**HKEX**') required listed companies to publish annual ESG reports since 2016. In most cases, listed companies may decide on which framework(s) and/or standard(s) to adopt, after considering their sector and materiality.

Again, regulators' focus remains on climate change disclosures, reflected by the global phenomena of mandating such disclosures. On one hand, governments display a preference for aligning disclosures with the TCFD Recommendations. One remarkable example is the UK's Companies Act 2006. Large companies, including but not limited to listed companies, are required to prepare 'strategic reports' that provide 'a fair review of the company's business' since 2013[46] and to specifically report on the management of environmental, employee, social, human rights and anti-corruption matters, where relevant to their operations, since 2016.[47] 'Climate-related financial disclosures' are added as a requirement, regardless of operations, in the most recent amendments in 2022.[48] These amendments essentially implemented the TCFD Recommendations, making the UK the first G20 country that legally mandate TCFD-aligned ESG reporting.[49] Other notable examples include a steering group comprising of Hong Kong regulators announcing in December 2020 that TCFD-alignment would be made mandatory in Hong Kong by 2025,[50] as well as the G7 finance ministers urging in June 2021 to mandate climate change-related financial risks based on the TCFD Recommendations.[51]

On the other hand, stock exchanges, though also looking for stricter climate change disclosures, do not necessarily seek to align with the TCFD Recommendations. For instance, in March 2022, the US Securities and Exchange Commission ('**SEC**') proposed to require listed companies to disclose climate change-related information in financial statements, including audited information, targets and transition plan on GHG emissions. [52] Modelled on the TCFD Recommendations, the SEC proposal takes a more minimal approach, having a lower materiality threshold and not requiring any climate-related scenario analysis,[53] seemingly motivated by compliance cost concerns.[54] In April 2023, the HKEX proposed to mandate climate-related disclosures in a lignment with the ISSB's emerging Standards.[55] These proposals, if adopted, will likely take effect in fiscal year 2024.

Reporters

Reporters focus their efforts on climate change too. 80% of the world's largest corporates are found to report their exposure to climate change risks in 2019.[56] More recently, a report reveals that, in 2021, despite 96% of the world's largest corporates disclosed some information on

44 'Exploring materiality,' SASB Standards, accessed July 2, 2023, https://sasb.org/standards/materiality-map/.
45 'ESG Disclosure Guidance Database,' Sustainable Stock Exchanges Initiative, accessed July 2, 2023, https://sseinitiative.org/esg-guidance-database/.
46 *Companies Act 2006*, Section 414C (1).
47 *Companies Act 2006*, Section 414A(A1).
48 *Companies Act 2006*, Section 414CA(A1).
49 'UK Introduces New Climate-Related Disclosure Regulations for UK Companies and LLPs,' ***Jones Day***, May, 2022, www.jonesday.com/en/insights/2022/05/uk-introduces-new-climaterelated-disclosure-regulations-for-uk-companies-and-llps.
50 Green and Sustainable Finance Cross-Agency Steering Group, 'Cross-Agency Steering Group Launches its Strategic Plan to Strengthen Hong Kong's Financial Ecosystem to Support a Greener and More Sustainable Future,' *Hong Kong Monetary Authority*, December 17, 2020, www.hkma.gov.hk/eng/news-and-media/press-releases/2020/12/20201217-4/.
51 David Milliken, 'G7 backs making climate risk disclosure mandatory,' Reuters, June 5, 2021, www.reuters.com/business/environment/g7-backs-making-climate-risk-disclosure-mandatory-2021-06-05/.
52 U.S. Securities and Exchange Commission, 'SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors,' March 21, 2022, www.sec.gov/news/press-release/2022-46.
53 'SEC's climate proposal vs. TCFD: What you need to know,' Linklaters, May 23, 2022, www.linklaters.com/en/knowledge/publications/alerts-newsletters-and-guides/2022/may/19/secs-climate-proposal-vs-tcfd-what-you-need-to-know1.
54 Virginia Harper Ho, 'Climate Disclosure Line-Drawing & Securities Regulation,' (Law Working Paper No. 684/2023, European Corporate Governance Institute, Brussels, February 2023), https://dx.doi.org/10.2139/ssrn.4339497.
55 Hong Kong Stock Exchange, 'Exchange Publishes Consultation Paper on Enhancement of Climate Disclosure under its ESG Framework,' April 14, 2023, www.hkex.com.hk/News/Regulatory-Announcements/2023/230414news?sc_lang=en.
56 Richard Mattison and Molly Mintz, 'Accounting for Climate: The Next Frontier in ESG,' *S&P Global*, October 11, 2019, www.spglobal.com/_division_assets/images/special-editorial/iif-2019/accountingforclimate_-.pdf.

all ESG components, they are more focused on climate change than any other ESG disclosures, as reflected by the statistics on ESG assurance, an extra step that corporates take to improve the credibility of their disclosed data and add value to their ESG reporting[57]: while 94% of them obtained assurance on GHG emission data, only 82%, 74% and 56% obtained assurance on other E, S and G data respectively.[58]

Understanding the Focus

Urgency

The urgency of climate change mitigation is the most common justification for ESG reporting to focus on climate change disclosures. Many years before the ESG terminology was coined in 2004, there has already been a widespread scientific, and perhaps to a lesser extent societal, consensus that the earth has been warming due to GHG accumulation. Climate change owing to ungoverned humanmade GHG emissions for the past centuries have reached an irreversible and potentially devastating level, posing more than just a biodiversity threat, but a greater-than-ever humanity threat, which warrants immediate global action. Giving climate change disclosures, especially GHG emissions, top priority is simply a logical consequence of the climate emergency.[59]

In fact, the historical development of ESG reporting regime mirrors that of each E, S and G components gaining public spotlight. Climate change scientists first linked GHG emissions with climate change in late 19th century,[60] marking the flourishing of this scientific field and the beginning of climate and environment activism. It was only until much later that the S and G components appeared in corporate social responsibility and sustainability agendas, subsequently combining with climate change and other E issues to form the ESG concept. As shown by Sections 3 and 4, with S and G components getting more attention, ESG reporting has evolved to cover broader ESG issues. In particular, Section 4.1 has illustrated that standard-setters started working on standards/frameworks for climate change disclosures before merging with other disclosures into the reporting regime now. The focus on climate change disclosures should more properly be described as a consequence of ongoing efforts throughout the years.

Measurement and Comparability

Quantifying ESG

More measurable and standardised data facilitates interpretation and comparison by stakeholders – that is why financial reporting emphasises comparability in addition to relevance, reliability and faithful representation.[61] It is common knowledge that extensive scientific research and initiatives have developed comprehensive standards to measure GHG emissions, the most important climate change disclosure, at global, national and corporate levels.[62] The GHG Protocol introduced in 2001 that classifies emissions into three 'Scopes' being the most well-known corporate standard among all.[63] But the nature of non-climate change-related ESG disclosures, being more concerned with internal processes and longer-term impacts[64] which may not be quantitative, makes them inherently less measurable and comparable.

Whilst the explanation given above has been treated as common sense by many, we move a step further to quantitatively examine the validity of this conventional thinking. To quantify the ease of measuring ESG disclosures, this paper adopts the 'Logic Model,' a strategic performance tool more commonly adopted in non-profit management that presents the relationship between the operation of a programme and the results it achieves.[65] The Logic Model divides the operation of a programme into five levels, namely 'Resources' (also referred to as 'Inputs'), 'Activities', 'Outputs', 'Outcomes' and 'Impacts'.[66] It maintains that, in evaluating programme performance, it is infeasible to develop metrics and

57 Auditing and Assurance Standards Committee of the Hong Kong Institute of Certified Public Accountants, *Technical Bulletin: Environmental, Social and Governance (ESG) Assurance Reporting*, (Hong Kong: Hong Kong Institute of Certified Public Accountants, December 2020), www.hkicpa.org.hk/-/media/HKICPA-Website/New-HKICPA/Standards-and-regulation/SSD/03_Our-views/TB_-Cir/Auditing/aatb5_20.pdf, 4.

58 International Federation of Accountants and Association of International Certified Professional Accountants, *The State of Play: Sustainability Disclosure and Assurance*, (New York: International Federation of Accountants, February 2023), https://ifacweb.blob.core.windows.net/publicfiles/2023-02/IFAC-State-of-Play-Sustainability-Assurance-Disclosures_0.pdf, 5.

59 Kaplan and Ramanna, 'How to Fix ESG Reporting,' 3.

60 Hervé Le Treut et al, 'Historical Overview of Climate Change Science,' in Climate Change *2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, (Cambridge: Cambridge University Press, 2007), www.ipcc.ch/site/assets/uploads/2018/03/ar4-wg1-chapter1.pdf, 105.

61 Marta de la Cuesta and Carmen Valor, 'Evaluation of the environmental, social and governance information disclosed by Spanish listed companies,' *Social Responsibility Journal* 9, no 2 (2013): 220–240, https://doi.org/10.1108/SRJ-08-2011-0065.

62 Kaplan and Ramanna, 'How to Fix ESG Reporting,' 5.

63 'Greenhouse Gas Protocol,' Initiatives, World Resources Institute, accessed July 2, 2023, www.wri.org/initiatives/greenhouse-gas-protocol.

64 For example, policies in place to prevent human rights violations and discrimination and promotion of gender diversity.

65 W.K. Kellogg Foundation, *Using Logic Models to Bring Together Planning, Evaluation, and Action: Logic Model Development Guide*, (Michigan: W.K. Kellogg Foundation, January 2004), www.naccho.org/uploads/downloadable-resources/Programs/Public-Health-Infrastructure/KelloggLogicModelGuide_161122_162808.pdf, 1.

66 Ibid, 2.

measure performance at each of the five levels due to differences in the types of programmes.[67]

Noting that ESG reporting and non-profit management theories are both based on general management theories and the similarity between the processes of the operation of non-profit programmes and corporates in general, this paper adopts the Logic Model to corporate performance in ESG reporting, to systematically analyse the level of difficulty in quantifying and measuring ESG disclosures. The adapted levels are defined as follows[68]:–

(1) 'Resources/Inputs': resources and investments required to operate the corporate, measured by quantitative metrics and qualitative descriptions;

(2) 'Activities': processes, events and actions undertaken by the corporate, measured by qualitative descriptions;

(3) 'Outputs': direct products of the corporate's 'Activities', measured by quantitative metrics describing the size and/or scope of 'Activities';

(4) 'Outcomes': specific individual level changes resulting from the operation that are attainable in one to six years, measured by quantitative metrics and more frequently, qualitative descriptions; and

(5) 'Impacts': systematic level changes resulting from the operation that are attainable in seven to ten years, measured by qualitative descriptions.

The definitions of the levels determine that some are more quantifiable and measurable than others. In general, the broader the scope and the longer the term of the results, the harder it is to attribute them to 'Resources' and 'Activities', given more causal factors may intervene with the results. Consequently, 'Impacts' are the hardest to quantify and measure among all levels, followed by 'Outcomes' then 'Activities'; whilst 'Outputs' is the most measurable level and 'Resources' is relatively easy to measure.

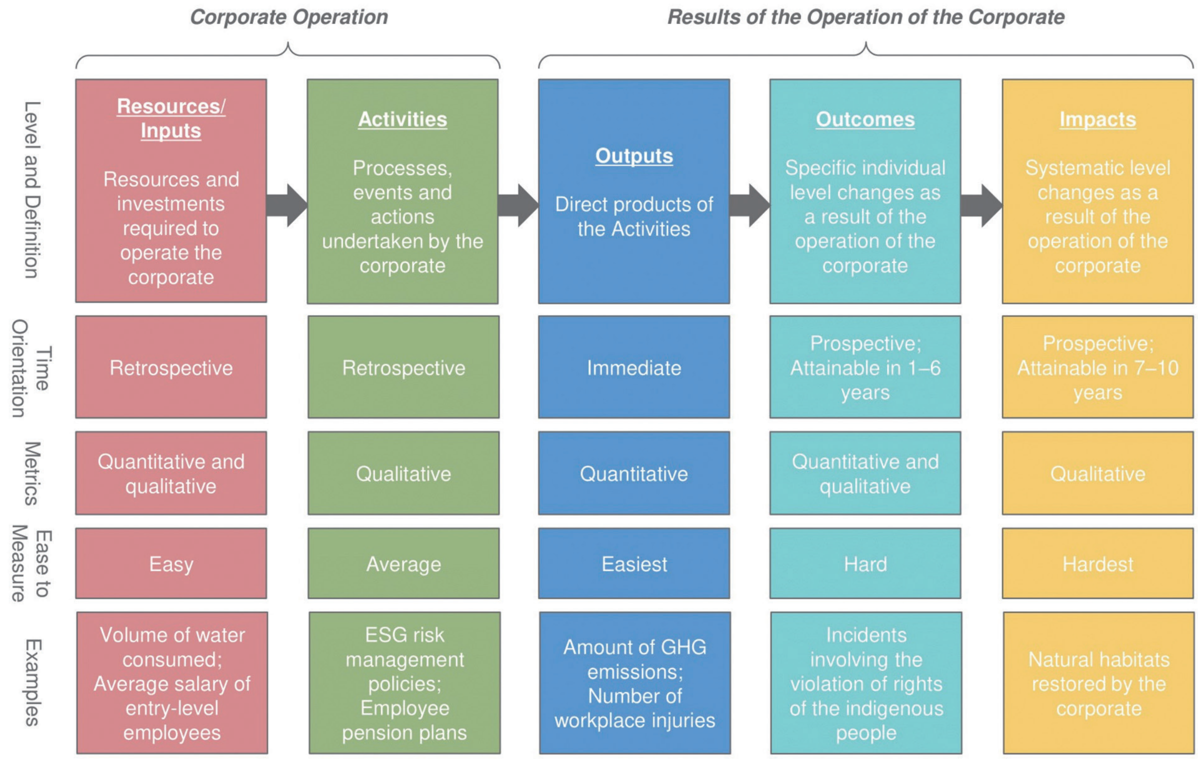

Figure 1: Logic Model for Corporate ESG Reporting

67 Alnoor Ebrahim and V. Kasturi Rangan, 'The Limits of Nonprofit Impact: A Contingency Framework for Measuring Social Performance,' (Working Paper No 10-099, Social Enterprise Initiative Harvard Business School, Massachusetts, May 2010), https://www.hbs.edu/ris/Publication%20Files/10-099_0b80d379-8e88-4992-9e8f-4b79596b1ff9.pdf.

68 Modified based on: W.K. Kellogg Foundation, Using *Logic Models*, 2; Ebrahim and Rangan, 'The Limits of Nonprofit Impact.'

We then categorise the disclosures required by the SASB Standards, GRI Standards and TCFD Recommendations into one of the five levels of the adapted Logic Model. Based on the categorisation, we find that the majority of E disclosures are 'Outputs' (78%), while that of S and G disclosures are 'Activities' (65% and 53% respectively). Among E disclosures, the overwhelming majority of climate change disclosures are 'Outputs' (89%), compared to other E disclosures of resource usage (60%), waste production (83%) and biodiversity and ecosystem compared to other E disclosures of resource usage (60%), (40%) (see Figures 2 and 3[69]). Given that 'Outputs' are the most quantifiable metrics, our findings confirm the conventional thinking that E disclosures are the easiest to measure among ESG disclosures. We further conclude that climate change disclosures are easier to measure than non-climate change-related E disclosures.

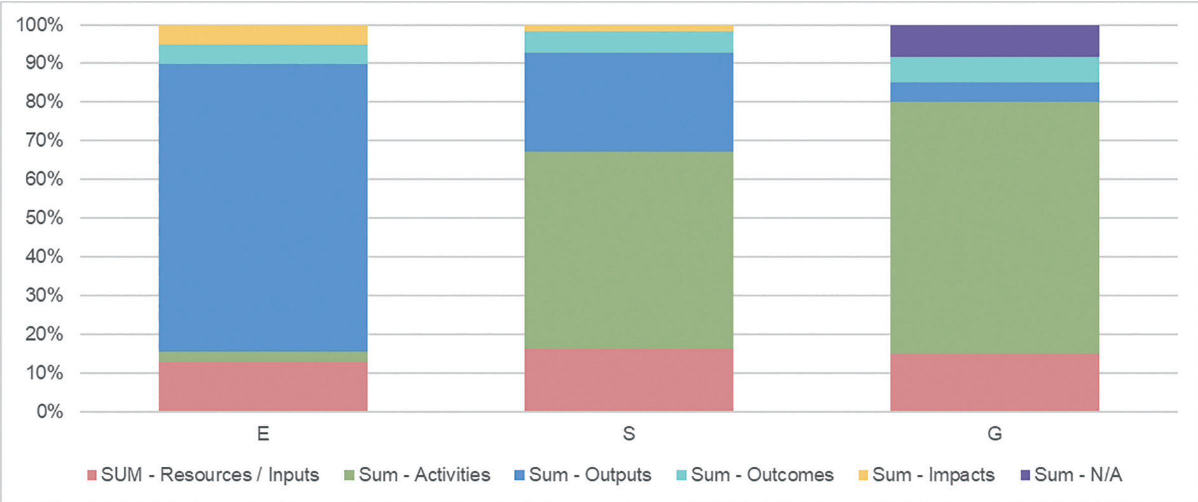

Figure 2: Percentage of ESG Disclosures by Level of Logic Model

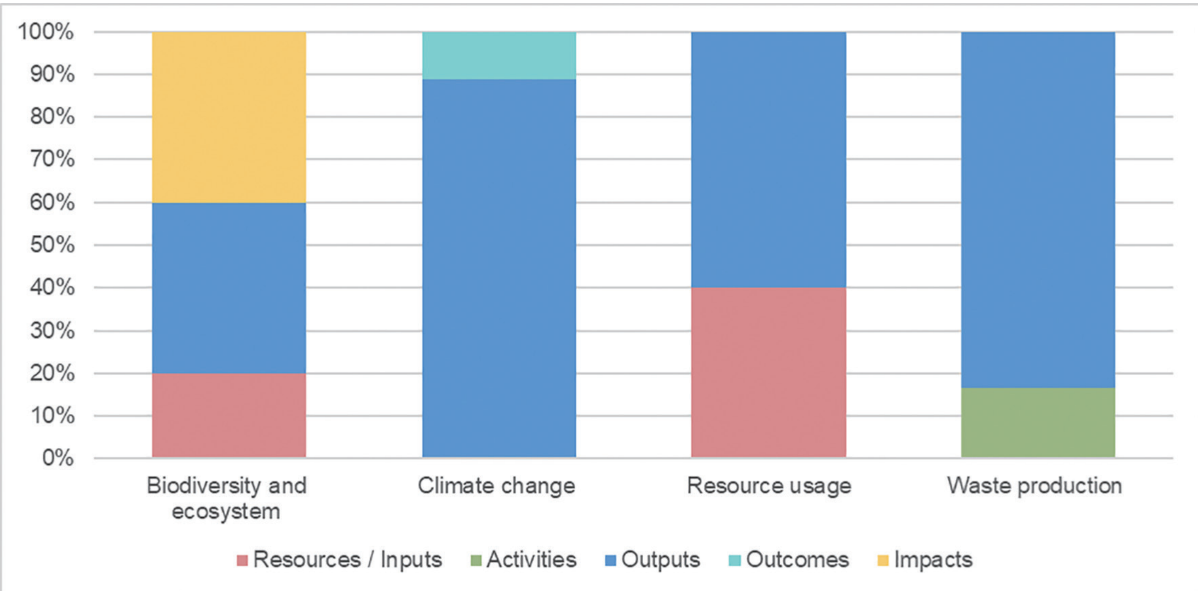

Figure 3: Percentage of E Disclosures by Level of Logic Model

69 See Appendices A and B for details of methodology, data sources and original data set.

Defining ESG

Whilst quantifying ESG disclosures is concerned with 'what to measure,' the definition of disclosures, another limb of measurability, tells 'how to measure.' Unlike climate change disclosures which have definite and universally agreed upon definitions and/or standard for measuring 'Outputs', like the amount of GHG that corporates consume and emit in metric tons, individual S and G components can be measured by various methods. Even if a societal consensus already exists on the desirability of achieving or complying with those components, in translating them into measurable quantitative 'Outputs' to facilitate comparisons, reporting standards/frameworks have adopted different subjective interpretations and definitions.[70]

Take anti-competitive behaviour as an example, while refraining from engaging in such behaviour is a universally desired ethical business practice under the G component, the GRI Standards measure it by the number of legal actions for anti-competitive behaviour and anti-trust;[71] on the contrary, for sectors which the SASB Standards identify anti-competitive behaviour as a material issue, it is measured by the total amount of monetary losses as a result of legal actions associated with anti-competitive behaviour and anti-trust.[72] Such diversity in the reporting of S and G components further hinders the making of judgements on the performance between corporates, even in the same sector, when adopting different reporting standards/frameworks.[73] As a result of finding E, particularly climate change disclosures, more comparable, stakeholders put more emphasis on the topic when evaluating ESG performance.

Interplay between Stakeholders

This section connects the dots between theories and previous discussions, as well as illustrate how, structurally, the stakeholder chain in ESG reporting leads to the focus on climate change disclosures.

Our findings in Section 5.2 reveal a fundamental problem with the current ESG regime: too many disclosures cannot be measured and compared meaningfully. At the beginning of that section, we note that ESG is more concerned with corporates' processes and longer-term impacts. This is especially true for G disclosures, since good governance is always about processes that need to be in place for a certain period of time before resulting in financial, environmental and societal improvements.[74] In other words, good governance is truly valuable only when it creates 'Outcomes' and 'Impacts', but they are too hard to measure.

Facing a difficult trade-off created by the nature of ESG disclosures, standard-setters have chosen to sacrifice the level of insight of data to be disclosed.[75] For less quantifiable S and G disclosures, they have settled for less insightful metrics founded on accounting principles, in order to balance with the accessibility for reporters to disclose and for other stakeholders to evaluate them.[76] By way of illustration, measuring gender diversity under the G component using 'Resources', like the ratio of women to men on the board, cannot tell much about the leadership's true perceptions towards gender diversity – but this is already the best measurable and comparable alternative. Thus, unfortunately, S and G disclosures are set in such a way that speaks mainly about what has been done and much less about what changes or improvements have been achieved.

The next stakeholder that comes into the picture is regulators. In the stakeholder theory, some stakeholders are more influential to corporate strategies given the level of power, legitimacy and urgency they exert.[77] Among all, extensive literature has confirmed that regulators are the most influential to ESG reporting practices.[78] Whereas Sections 2.1 and 3 demonstrate the historical and practical reasons for standard-setters to focus on climate change disclosures in designing reporting standards/frameworks, Section 2.2.2 reveals that regulators have in some sense 'delegated' standard-setting authority to standard-setters by basing reporting

70 Kaplan and Ramanna, 'How to Fix ESG Reporting,' 3 and 10.

71 Global Reporting Initiative, *GRI 206: Anti-competitive* Behavior 2016, (Amsterdam: Global Reporting Initiative, October 2016), 8.

72 For example, see EM-CM-520a.1 for the Construction Materials sector, which the SASB identifies the market as being suspectible to instances of anti-competitive behaviours like cartel. See: SASB Standards Board, Construction *Materials Sustainability Accounting Standard* (London: IFRS Foundation, June 2023), https://d3flraxduht3gu.cloudfront.net/latest_standards/construction-materials-standard_en-us.pdf, 28.

73 Lokuwaduge and Heenetigala, 'Integrating ESG Disclosure,' 438–439.

74 Kaplan and Ramanna, 'How to Fix ESG Reporting,' 10.

75 Bose, 'Evolution of ESG Reporting,' 13.

76 Bose, 'Evolution of ESG Reporting,' 14.

77 Ronald Mitchell, Bradley Agle and Donna Wood, 'Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts,' *Academy of Management Review* 22, no 4 (1997): 853–886, https://doi.org/10.2307/259247.

78 Corinna Dögl and Michael Behnam, 'Environmentally Sustainable Development through Stakeholder Engagement in Developed and Emerging Countries,' *Business Strategy and the Environment* 24, no 6 (2014): 583–600, https://doi.org/10.1002/bse.1839; Lokuwaduge and Heenetigala, 'Integrating ESG Disclosure.'

laws and regulations on or even directly adopting their standards/frameworks, leading regulators to be stricter on climate change disclosures. It is therefore safe to say that regulators do not solely influence corporates in what to report, but also what not to report – more impacted by existing laws and regulations, corporates eventually converge their attention on climate change disclosures which extends to impacts on operation strategies.

Though regulators are strict on climate change disclosures, other non-climate change-related disclosures remain largely voluntary. Additional voluntary reporting should create positive value among stakeholders including investors, which corresponds with the stakeholder and shareholder theories. However, research finds that voluntary reporting is not that popular.[79] This is better explained by the legitimacy and agency theories. Voluntary reporting means corporates can choose whether and if so, how, to disclose relevant information.[80] Noticing that some additional voluntary disclosures may instead harm their legitimacy, corporates which have asymmetrical access to their ESG information are motivated to do less, in order to maintain a more favourable image to investors and minimise disapproval from stakeholders.[81]

Corporates decide to further narrow down additional voluntary reporting focus to climate change disclosures because of the measurement and comparability problem in Section 5.2. One most direct concern is obviously reporting costs – by picking what is easier to report, they please stakeholders at lower costs. To add on, stakeholders have greater expectations for them to report on more absolutely defined components, often being climate change-related, like GHG emissions. They are thus less likely able to withhold such information even if stakeholders have no access to. Indeed, research finds that corporates, in reporting voluntary S and G components, either leave those that could create negative reactions from stakeholders unmentioned or least mentioned,[82] which supports our analysis.

Finally, other stakeholders including investors and the wider society receive and interpret corporates' ESG reports. Apart from using the disclosed information to value corporates financially and non-financially, they compare corporates' reports. Of course, the insightfulness of ESG reports very much depends on what corporates choose to disclose and the level of insight of each disclosure. Though standard-setters have done their best to ensure the measurability and comparability of disclosures subsequently mandated by regulators, the problem remains inevitable for voluntary disclosures, which are mainly non-climate change-related. In other words, even when corporates voluntarily make additional disclosures, other stakeholders interpreting the ESG reports find those disclosures less helpful to their evaluation of corporates' ESG performance than those mandatory.

In short, all stakeholders involved in ESG reporting, because of different motivations and concerns, focus their attention on climate change disclosures. Consequently, the interaction between these stakeholders continuously reinforces the paramount importance of climate change disclosures in the present ESG reporting regime.

79 Lokuwaduge and Heenetigala, 'Integrating ESG Disclosure,' 447.
80 Harper Ho, 'Modernizing ESG Disclosure,' 289.
81 Deegan, 'Introduction: The legitimising effect.'
82 Lokuwaduge and Heenetigala, 'Integrating ESG Disclosure,' 448.

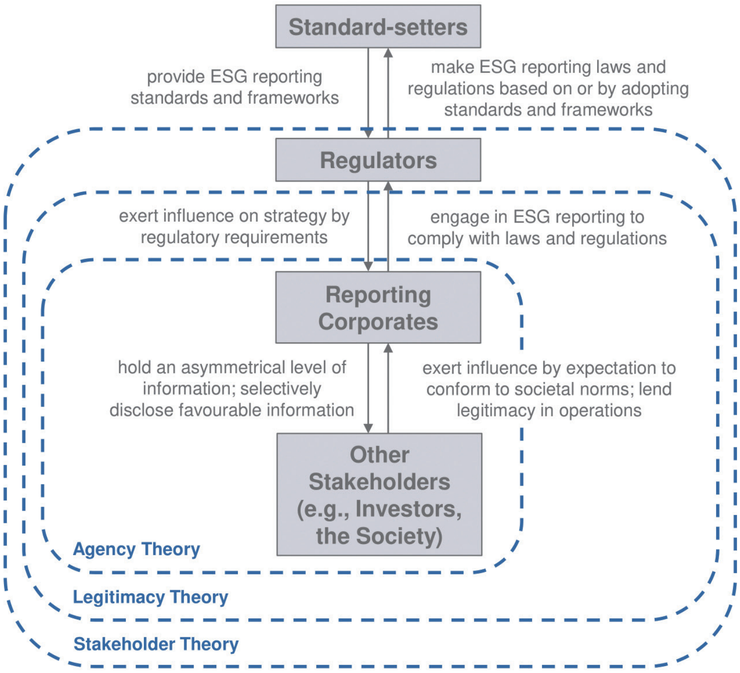

Figure 4: Interaction between Stakeholders

A Foundation to Build Upon

The previous sections demonstrate that the present ESG reporting regime's focus on climate change disclosures is a structural, historical and practical phenomenon. They also demonstrate, albeit less directly, that the regime is not too focused on climate change disclosures: the importance of non-climate change-related components, though less prioritised, is nevertheless considered. In no sense is there any tunnel vision that deny the importance of non-climate change ESG risks.

Rather than revealing a 'problem' to be solved per se, the focus on climate change disclosures should be treated as the starting point of ESG reporting, providing the foundation for E and ESG disclosures to build upon.

Moving forward, ESG reporting should be an iterative process. First, standard-setters should review and update standards/frameworks at least annually. Future research efforts may improve the measurement and comparability of certain non-climate change-related disclosures, they must incorporate these global developments into their standards/frameworks. In the same vein, while we expect climate change to remain the most urgent ESG issue that should be prioritised in the years to come, standards/frameworks still need to reflect changes in social value on non-climate change-related disclosures. To exemplify, the Ukraine war and resulting energy crisis has given rise to criticisms that the concept of ESG underestimates the importance of S and G components, particularly geopolitics,[83] citing rating agencies' 'U-turn' in downgrading ESG ratings for Russian government-linked corporates almost immediately upon Russia's invasion of Ukraine in February 2022, even though their ratings were improved as recently as December 2021.[84] It is true that the claims are based on a 'black swan event' that is so unpredictable and unmanageable[85] and more directly relevant to ESG investing instead of reporting, while the present regime already measures geopolitical risks such as by subsuming disclosures on forced labour risks that can represent sanction risks relating to human rights under the S component.[86] Yet, the claims do reflect some societal consensus to consider more geopolitics that standard-setters should respond to, if not act upon, in any event.

83 Gisele Widdershoven, 'Ukraine crisis puts pressure on ESG reporting and investments,' *LinkedIn*, *March* 23, 2022, www.linkedin.com/pulse/ukraine-crisis-puts-pressure-esg-reporting-gisele-widdershoven.

84 Ross Kerber and Tommy Wilkes, 'Insight: How Russia's war blindsided the world of ESG investing,' Reuters, July 1, 2022, www.reuters.com/business/how-russias-war-blindsided-world-esg-investing-2022-07-01/.

85 Ibid.

86 Orlan Boston, 'Why Geopolitics is Fast Becoming the Added G in ESG,' *Environment + Energy Leader*, April 27, 2023, www.environmentalleader.com/2023/04/why-geopolitics-is-fast-becoming-the-added-g-in-esg/.

Second, regulators should mandate ESG reporting progressively. As more countries require climate change disclosures, efforts should subsequently shift to mandating also non-climate change-related disclosures. The point to make is that regulators should focus on one core aspect of ESG first, instead of dispersing resources by aggressively demanding for everything from reporters in one go, which will discourage compliance too. Another progression is to mandate ESG reporting regardless of corporate size. To date, ESG reporting is more popular among larger corporates. A 2021 survey even finds that 30% of small and medium-sized enterprises ('SME') in the European Union opposed mandatory ESG reporting.[87] Such reluctance cannot be disentangled from the structural causes of: mainstream standards/frameworks being designed in a manner that better suit larger corporates whose stakeholders tend to look for longer-term impacts on top of profits;[88] regulators requiring only large and listed companies to report ESG risks; and SME reporters not having enough money and non-financial resources to support ESG reporting that meets the rigorous standards/frameworks.[89] Thus, regulators should work with standard-setters to design more lenient standards/frameworks categorised by market capitalisation, eventually promoting universal ESG reporting practices for all corporates.

Finally, more standardisation is needed. The key differences between the analysed standards/frameworks point to a central issue of ESG reporting – inconsistency. Indeed, stakeholders raised discontent on it. Reporters are overwhelmed by the 'alphabet soup' of acronyms[90] and struggle to simultaneously comply with multiple frameworks and standards that are at times contradictory.[91] Investors and other stakeholders also find the multiplicity of voluntary standards/frameworks frustrating: the difficulty in comparing disclosures increase their costs to meaningfully interpret them.[92] These concerns have fuelled calls for further harmonisation of standards/frameworks,[93] which the ISSB has taken on as its mission.[94] While it is too early to say whether the ISSB's emerging IFRS SDS will evolve into a single global standard, narrowing down the number of standards is certainly preferable to the current state of the regime. With a more standardised reporting regime, it should also be easier for regulators to push for mandatory disclosures, hopefully able to raise the quality of ESG reporting structurally.

Conclusion

It is obvious from our analysis that, two decades on, the ESG reporting regime is still far from perfect. Its focus on climate change disclosures should be a concern, but ESG, as a relatively newborn concept, already thrived so much in the sense that globally accepted reporting standards/frameworks were developed within two decades. Even for financial reporting, despite professional accountancy emerged as early as in 1880, global efforts to set universal accounting standards only began in 1973 and it took three decades for the first set of standards to be published and adopted.[95] Hence, the ESG reporting regime should not immediately be denounced as being too focused on climate change disclosures due to cumulative effects of stakeholders' concerns to prioritise climate change mitigation and ensure the regime's accessibility. Attention should instead be on continually improving the regime into one that comprehensively considers all ESG risks and followed by corporates of all sizes.

87 European Commission, 'COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT Accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting,' (SWD(2021) 150 final, European Commission, Brussels, Belgium, April 2021), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021SC0150, 84.

88 Bose, 'Evolution of ESG Reporting,' 20; Angus Yip and William Yu, 'The Quality of Environmental KPI Disclosure in ESG Reporting for SMEs in Hong Kong,' Sustainability 15, no 4 (2023): 3634, https://doi.org/10.3390/su15043634, 5.

89 Wickert, Scherer and Spence, 'Walking and Talking,' 1185.

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94 See also note 43; 'International Sustainability Standards Board,' IFRS Foundation, accessed July 2, 2023, www.ifrs.org/groups/international-sustainability-standards-board/.

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Appendix A: Methodology and Data Sources

The adapted Logic Model for corporate ESG reporting in Section 5.2.1 and illustrated in Figure 1 is theoretically based on the non-profit management Logic Model, which defines the five levels as follows[96]:–

(1) 'Resources/Inputs': resources and investments required to operate the programme, measured by both quantitative metrics and qualitative descriptions of resources and investments;

(2) 'Activities': processes, events and actions of the programme, measured by qualitative descriptions;

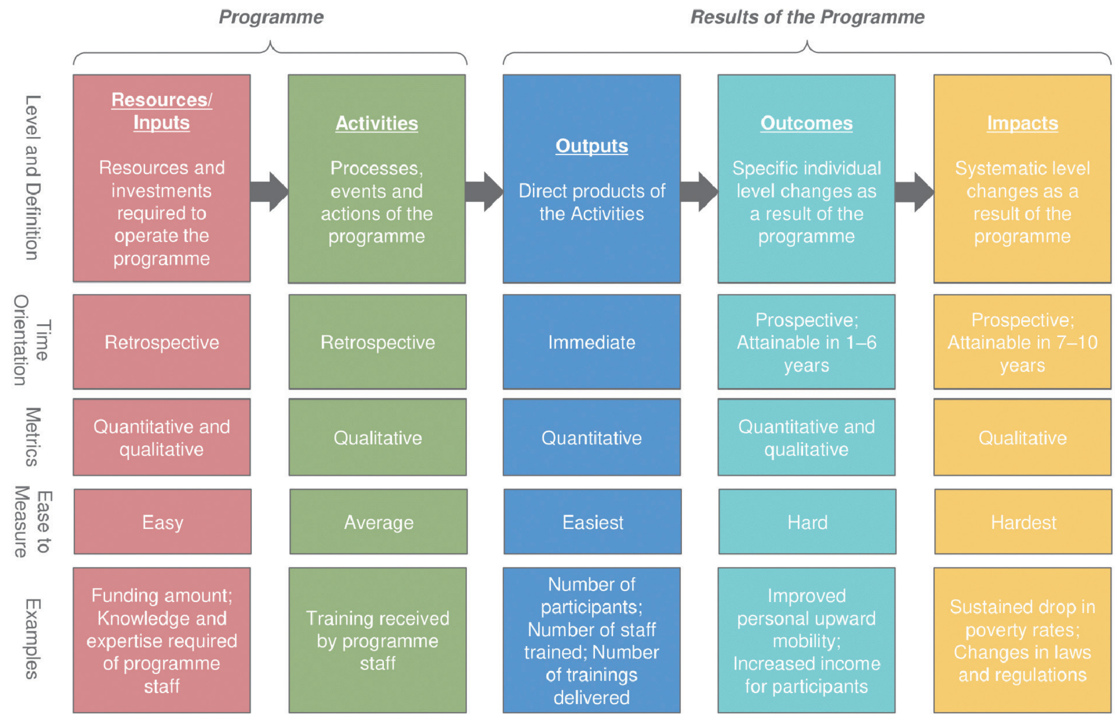
(3) 'Outputs': direct products of the 'Activities', measured by quantitative metrics describing the size and/or scope of the 'Activities';

(4) 'Outcomes': specific individual level changes as a result of the programme attainable in one to six years, measured by quantitative metrics and more frequently, qualitative descriptions of the changes; and

(5) 'Impacts': systematic level changes as a result of the programme attainable in at least seven to ten years, measured by qualitative descriptions.

The original Logic Model that we draw from can be more succinctly summarised by the figure:–

Figures 2 and 3 are drawn based on an original data set compiled by the authors. The data set consists of three components, the SASB Standards, GRI Standards and TCFD Recommendations. The individual disclosures of each component are obtained from the following sources:–



96 The following is a summary based on: W.K. Kellogg Foundation, *Using Logic Models*, 2; Ebrahim and Rangan, 'The Limits of Nonprofit Impact.'

- The SASB Universe of Sustainability Issues[97,98];
- Universal and Topic Standards of the GRI[99,100]; and
- The TCFD Recommendations.[101,102]

In categorising individual disclosures into E, S and G disclosures, this paper directly adopts the definition of the European Banking Authority that ESG components are environmental, social or governance matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual'.[103] However, we have slightly modified the European Banking Authority's categorisation of E, S and G components, with reference to scholarly categorisation,[104] into the following:–

Component	Category	Sub-category (if any)
Environment ('E')	Climate change	Emissions
		Energy efficiency
		Environmental hazards
	Resource usage	
	Waste production	
	Biodiversity and ecosystem	
Social ('S')	Community/Society	
	Employee relationships/Labour standards	
	Customer relationships	
	Value chain management	
	Human rights	
	Poverty	
Governance ('G')	Corporate structure	
	Ethical considerations	
	Strategy and risk management	
	Diversity and inclusion	
	Transparency	
	Stakeholder engagement	

97 Sustainability Accounting Standards Board, *SASB Conceptual Framework*, (San Francisco: Sustainability Accounting Standards Board, February 2017), www.sasb.org/wp-content/uploads/2019/05/SASB-Conceptual-Framework.pdf?source=post_page, 4.

98 Note that the SASB is sector-specific in that individual disclosures required for each sector differs, the SASB Universe of Sustainability Issues is therefore adopted.

99 Global Reporting Initiative, *Consolidated Set of the GRI Standards*, (Amsterdam: Global Reporting Initiative, June 2022).

100 Note that Sector Standards gives supplemental guidance on disclosures included in the Topic Standards based on the sector that the reporter operates in. Given this paper provides a more general view of the ESG reporting regime, the Sector Standards is not included in this data set.

101 Task Force on Climate-Related Financial Disclosures, *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures*, (New York: Task Force on Climate-Related Financial Disclosures, October 2021), https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Implementing_Guidance.pdf.

102 Note that the TCFD published a set of supplemental guidance for the financial sector based on the general Recommendations. Given this paper provides a more general view of the ESG reporting regime, the supplemental guidance is not included in this data set.

103 European Banking Authority, *EBA Report on Management and Supervision of ESG Risks for Credit Institutions and Investment Firms EBA/REP/2021/18, (Paris: European Banking Authority, June 2021*), www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf, 6.

104 Ting-Ting Li et al, 'ESG: Research Progress and Future Prospects,' Sustainability 13, no 21 (2021): 11663, https://doi.org/10.3390/su132111663, 1.

Appendix B: Original Data Set

SASB

Sustainability issue	Disclosure	Component	Further categorization (if any)	Level of the Logic Model
Environment	GHG Emissions	E	Emissions	Outputs
	Air Quality	E	Emissions	Outputs
	Energy Management	E	Energy efficiency	Outputs
	Water & Wastewater Management	E	Resource usage	Outputs
	Waste & Hazardous Materials Management	E	Waste production	Outputs
	Ecological Impacts	E	Biodiversity and ecosystem	Outputs
Social Capital	Human Rights & Community Relations	S	Human rights	Activities
	Customer Privacy	S	Customer relationships	Activities
	Data Security	S	Community/Society	Activities
	Access & Affordability	S	Community/Society	Outputs
	Product Quality & Safety	S	Customer relationships	Outputs
	Customer Welfare	S	Customer relationships	Outcomes
	Selling Practices & Product Labelling	S	Customer relationships	Activities
Human Capital	Labour Practices	S	Employee relationships/Labour standards	Activities
	Employee Health & Safety	S	Employee relationships/Labour standards	Activities
	Employee Engagement, Diversity & Inclusion	G	Diversity and inclusion	Resources / Inputs
	Product Design & Lifecycle Management	S	Value chain management	Activities
	Business Model Resilience	G	Strategy and risk management	Activities
	Supply Chain Management	S	Value chain management	Activities
	Materials Sourcing & Efficiency	E	Resource usage	Resources / Inputs
	Physical Impacts of Climate Change	E	Climate change	Outcomes
Leadership & Governance	Business Ethics	G	Ethical considerations	Activities
	Competitive Behaviour	G	Ethical considerations	Activities
	Management of the Legal & Regulatory Environment	G	Ethical considerations	Activities
	Critical Incident Risk Management	G	Strategy and risk management	Activities
	Systemic Risk Management	G	Strategy and risk management	Activities

GRI

Set	GRI Standard	Disclosure	Component	Further categorization (if any)	Level of the Logic Model
Universal	GRI 2: General Disclosures 2021	2-1 Organizational details	G	Corporate structure	N/A
		2-2 Entities included in the organization's sustainability reporting	G	Transparency	N/A
		2-3 Reporting period, frequency and contact point	G	Transparency	N/A
		2-4 Restatements of information	G	Transparency	N/A
		2-5 External assurance	G	Strategy and risk management	Activities
		2-6 Activities, value chain and other business relationships	G	Transparency	Activities
		2-7 Employees	G	Corporate structure	Resources / Inputs
		2-8 Workers who are not employees	G	Corporate structure	Resources / Inputs
		2-9 Governance structure and composition	G	Corporate structure	Resources / Inputs
		2-10 Nomination and selection of the highest governance body	G	Corporate structure	Resources / Inputs
		2-11 Chair of the highest governance body	G	Corporate structure	Resources / Inputs
		2-12 Role of the highest governance body in overseeing the management of impacts	G	Strategy and risk management	Activities
		2-13 Delegation of responsibility for managing impacts	G	Strategy and risk management	Activities
		2-14 Role of the highest governance body in sustainability reporting	G	Strategy and risk management	Activities
		2-15 Conflicts of interest	G	Strategy and risk management	Activities
		2-16 Communication of critical concerns	G	Strategy and risk management	Activities
		2-17 Collective knowledge of the highest governance body	G	Strategy and risk management	Activities
		2-18 Evaluation of the performance of the highest governance body	G	Strategy and risk management	Activities
		2-19 Remuneration policies	G	Strategy and risk management	Activities
		2-20 Process to determine remuneration	G	Strategy and risk management	Activities
		2-21 Annual total compensation ratio	G	Transparency	Resources / Inputs
		2-22 Statement on sustainable development strategy	G	Strategy and risk management	Activities
		2-23 Policy commitments	G	Strategy and risk management	Activities
		2-24 Embedding policy commitments	G	Strategy and risk management	Activities
		2-25 Processes to remediate negative impacts	G	Strategy and risk management	Activities
		2-26 Mechanisms for seeking advice and raising concerns	G	Strategy and risk management	Activities
		2-27 Compliance with laws and regulations	G	Ethical considerations	Activities
		2-28 Membership associations	G	Stakeholder engagement	Activities
		2-29 Approach to stakeholder engagement	G	Stakeholder engagement	Activities
		2-30 Collective bargaining agreements	S	Employee relationships/Labour standards	Activities
	GRI 3: Material Topics 2021	3-1 Process to determine material topics	G	Strategy and risk management	Activities
		3-2 List of material topics	G	Transparency	N/A
		3-3 Management of material topics	G	Strategy and risk management	Activities
Topic	GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	G	Transparency	Outputs
		201-2 Financial implications and other risks and opportunities due to climate change	E	Climate change	Outcomes
		201-3 Defined benefit plan obligations and other retirement plans	S	Employee relationships/Labour standards	Activities
		201-4 Financial assistance received from government	S	Stakeholder engagement	Resources / Inputs
	GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	S	Employee relationships/Labour standards	Resources / Inputs
		202-2 Proportion of senior management hired from the local community	S	Employee relationships/Labour standards	Resources / Inputs
	GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	S	Community/Society	Outputs
		203-2 Significant indirect economic impacts	S	Community/Society	Impacts
	GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	S	Value chain management	Outputs
	GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	G	Ethical considerations	Resources / Inputs
		205-2 Communication and training about anti-corruption policies and procedures	G	Ethical considerations	Activities
		205-3 Confirmed incidents of corruption and actions taken	G	Ethical considerations	Outputs
	GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	G	Ethical considerations	Outputs
	GRI 207: Tax 2019	207-1 Approach to tax	G	Transparency	Activities
		207-2 Tax governance, control, and risk management	G	Strategy and risk management	Activities
		207-3 Stakeholder engagement and management of concerns related to tax	G	Stakeholder engagement	Activities
		207-4 Country-by-country reporting	G	Transparency	Activities

	GRI 301: Materials 2016	301-1 Materials used by weight or volume	E	Resource usage	Resources / Inputs
		301-2 Recycled input materials used	E	Resource usage	Resources / Inputs
		301-3 Reclaimed products and their packaging materials	E	Resource usage	Resources / Inputs
	GRI 302: Energy 2016	302-1 Energy consumption within the organization	E	Energy efficiency	Outputs
		302-2 Energy consumption outside of the organization	E	Energy efficiency	Outputs
		302-3 Energy intensity	E	Energy efficiency	Outputs
		302-4 Reduction of energy consumption	E	Energy efficiency	Outputs
		302-5 Reductions in energy requirements of products and services	E	Energy efficiency	Outputs
	GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	E	Resource usage	Outputs
		303-2 Management of water discharge-related impacts	E	Resource usage	Outputs
		303-3 Water withdrawal	E	Resource usage	Outputs
		303-4 Water discharge	E	Resource usage	Outputs
		303-5 Water consumption	E	Resource usage	Outputs
	GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	E	Biodiversity and ecosystem	Resources / Inputs
		304-2 Significant impacts of activities, products and services on biodiversity	E	Biodiversity and ecosystem	Impacts
		304-3 Habitats protected or restored	E	Biodiversity and ecosystem	Impacts
		304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	E	Biodiversity and ecosystem	Outputs
	GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	E	Emissions	Outputs
		305-2 Energy indirect (Scope 2) GHG emissions	E	Emissions	Outputs
		305-3 Other indirect (Scope 3) GHG emissions	E	Emissions	Outputs
		305-4 GHG emissions intensity	E	Emissions	Outputs
		305-5 Reduction of GHG emissions	E	Emissions	Outputs
		305-6 Emissions of ozone-depleting substances (ODS)	E	Emissions	Outputs
		305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	E	Emissions	Outputs
	GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	E	Waste production	Outputs
		306-2 Management of significant waste-related impacts	E	Waste production	Activities
		306-3 Waste generated	E	Waste production	Outputs
		306-4 Waste diverted from disposal	E	Waste production	Outputs
		306-5 Waste directed to disposal	E	Waste production	Outputs
	GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	S	Value chain management	Resources / Inputs
		308-2 Negative environmental impacts in the supply chain and actions taken	S	Value chain management	Outputs
	GRI 401: Employment 2016	401-1 New employee hires and employee turnover	S	Employee relationships/Labour standards	Resources / Inputs
		401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	S	Employee relationships/Labour standards	Activities
		401-3 Parental leave	S	Employee relationships/Labour standards	Activities
	GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	S	Employee relationships/Labour standards	Activities
	GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	S	Employee relationships/Labour standards	Activities
		403-2 Hazard identification, risk assessment, and incident investigation	S	Employee relationships/Labour standards	Activities
		403-3 Occupational health services	S	Employee relationships/Labour standards	Activities
		403-4 Worker participation, consultation, and communication on occupational health and safety	S	Employee relationships/Labour standards	Activities
		403-5 Worker training on occupational health and safety	S	Employee relationships/Labour standards	Activities
		403-6 Promotion of worker health	S	Employee relationships/Labour standards	Activities
		403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	S	Employee relationships/Labour standards	Activities
		403-8 Workers covered by an occupational health and safety management system	S	Employee relationships/Labour standards	Outputs
		403-9 Work-related injuries	S	Employee relationships/Labour standards	Outputs
		403-10 Work-related ill health	S	Employee relationships/Labour standards	Outputs
	GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	S	Employee relationships/Labour standards	Activities
		404-2 Programs for upgrading employee skills and transition assistance programs	S	Employee relationships/Labour standards	Activities
		404-3 Percentage of employees receiving regular performance and career development reviews	S	Employee relationships/Labour standards	Outputs
	GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	G	Diversity and inclusion	Resources / Inputs
		405-2 Ratio of basic salary and remuneration of women to men	S	Employee relationships/Labour standards	Activities
	GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	S	Employee relationships/Labour standards	Outputs
	GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	S	Value chain management	Resources / Inputs
	GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	S	Employee relationships/Labour standards	Resources / Inputs
	GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	S	Employee relationships/Labour standards	Resources / Inputs
	GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	S	Human rights	Activities
	GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	S	Human rights	Outcomes
	GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	S	Community/Society	Activities
		413-2 Operations with significant actual and potential negative impacts on local communities	S	Community/Society	Activities
	GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	S	Value chain management	Resources / Inputs
		414-2 Negative social impacts in the supply chain and actions taken	S	Value chain management	Outcomes
	GRI 415: Public Policy 2016	415-1 Political contributions	G	Transparency	Activities
	GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	S	Customer relationships	Activities
		416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	S	Customer relationships	Outputs
	GRI 417: Marketing and Labeling 2016	417-1 Requirements for product and service information and labeling	S	Customer relationships	Activities
		417-2 Incidents of non-compliance concerning product and service information and labeling	S	Customer relationships	Outputs
		417-3 Incidents of non-compliance concerning marketing communications	S	Customer relationships	Outputs
	GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	S	Customer relationships	Outputs

TCFD[105]

Section	TCFD Recommendation	Disclosure	Component	Further categorization (if any)	Level of the Logic Model
Governance	a) Describe the board's oversight of climate-related risks and opportunities.	In describing the board's oversight of climate-related issues, organizations should consider including a discussion of the following: • processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues • whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures • how the board monitors and oversees progress against goals and targets for addressing climate-related issues.	G	Strategy and risk management	Activties
	b) Describe management's role in assessing and managing climate-related risks and opportunities.	In describing management's role related to the assessment and management of climate-related issues, organizations should consider including the following information: • whether the organization has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues • a description of the associated organizational structure(s) • processes by which management is informed about climate-related issues • how management (through specific positions and/or management committees) monitors climate-related issues	G	Corporate structure	Activties
Strategy	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	Organizations should provide the following information: - a description of what they consider to be the relevant short-, medium-, and long-term time horizons, taking into consideration the useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms - a description of the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the organization; and - a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization. Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to Tables A1 and A2.	G	Strategy and risk management	Outcomes
	b) Describe the impact of climate related risks and opportunities on the organization's businesses, strategy, and financial planning.	Building on recommended disclosure (a), organizations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning Organizations should consider including the impact on their businesses, strategy, and financial planning in the following areas: - Products and services - Supply chain and/or value chain - Adaptation and mitigation activities - Investment in research and development - Operations (including types of operations and location of facitilites) - Acquisitions or divestments - Access to capital Organizations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritized. Organizations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time. Organizations should describe the impact of climate-related issues on their financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities). If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described. Organizations should describe the impact of climate-related issues on their financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities). If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described.	G	Strategy and risk management	Outcomes
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a low-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks. Organizations should consider discussing: • Where they believe their strategies may be affected by climate-related risks and opportunities • How their strategies might change to address such potential risks and opportunities • The potential impact of climate-related issues on financial performance (e.g., revenues, costs) and financial position (e.g., assets, liabilities); and • The climate-related scenarios and associated time horizon(s) considered	G	Strategy and risk management	Outcomes
Risk management	a) Describe the organization's processes for identifying and assessing climate-related risks.	Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks. Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered Organizations should also consider disclosing the following: • processes for assessing the potential size and scope of identified climate-related risks and • definitions of risk terminology used or references to existing risk classification frameworks used.	G	Strategy and risk management	Activties
	b) Describe the organization's processes for managing climate-related risks.	Organizations should describe their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. In addition, organizations should describe their processes for prioritizing climate related risks, including how materiality determinations are made within their organizations. In describing their processes for managing climate-related risks, organizations should address the risks included in Tables A1 and A2 (pp. 72-73), as appropriate.	G	Strategy and risk management	Activties
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.	G	Transparency	Activties

105 Note that all disclosures under the TCFD Recommendations are climate change-related. The data set is therefore organised by categorising which of the E, S and G component and categories each disclosure is the most relevant to in addition to the E component and climate change category.

Metrics and targets	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Organizations should provide the key metrics used to measure and manage climaterelated risks and opportunities, as described in Tables A1.1 and A1.2 (pp. 75–76), as well as metrics consistent with the cross-industry, climate-related metric categories described in Table A2.1 (p. 79).30 Organizations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable. Where climate-related issues are material, organizations should consider describing whether and how related performance metrics are incorporated into remuneration policies. Where relevant, organizations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a lower-carbon economy. Metrics should be provided for historical periods to allow for trend analysis. Where appropriate, organizations should consider providing forward-looking metrics for the cross-industry, climate-related metric categories described in Table A2.1 (p. 79), consistent with their business or strategic planning time horizons. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate climate-related metrics.	G	Transparency	Activties
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Organizations should provide their Scope 1 and Scope 2 GHG emissions independent of a materiality assessment, and, if appropriate, Scope 3 GHG emissions and the related risks.31 All organizations should consider disclosing Scope 3 GHG emissions GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.34 As appropriate, organizations should consider providing related, generally accepted industry-specific GHG efficiency ratios.3 GHG emissions and associated metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate the metrics	E	Emissions	Outputs
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	Organizations should describe their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc., in line with the cross-industry, climaterelated metric categories in Table A2.1 (p. 79), where relevant, and in line with anticipated regulatory requirements or market constraints or other goals. Other goals may include efficiency or financial goals, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a low-carbon economy. In describing their targets, organizations should consider including the following: • whether the target is absolute or intensity based • time frames over which the target applies • base year from which progress is measured • key performance indicators used to assess progress against targets Organizations disclosing medium-term or long-term targets should also disclose associated interim targets in aggregate or by business line, where available Where not apparent, organizations should provide a description of the methodologies used to calculate targets and measures	G	Strategy and risk management	Outcomes

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Second runner-up

Sandy Ma, Karen Tam, Kelly Cheung and Kelly Chan

The Chinese University of Hong Kong, Integrated Bachelor of Business Administration, The Hang Seng University of Hong Kong, Bachelor of Business Administration (Honours) in Supply Chain Management, The University of Hong Kong, Bachelor of Business Administration and The Chinese University of Hong Kong, Integrated Bachelor of Business Administration

Introduction

Climate change is a global challenge that poses significant threats to the environment, human health, and economic stability. As the world continues to grapple with the ongoing climate crisis, it has become increasingly clear that businesses must play a critical role in addressing this issue. One way that companies can contribute to mitigating climate change is by disclosing their climate-related risks, opportunities, and strategies. Climate change disclosure is crucial as it allows investors, stakeholders, and policymakers to make informed decisions that can drive the necessary changes towards a sustainable future. However, despite the importance of climate disclosure, different countries have set their own standards, creating a patchwork of regulations and guidelines. This essay argues that the world's attention towards climate disclosures is not excessive, as the benefits of proper disclosure outweigh the associated costs or drawbacks. The essay also addresses the long-standing concerns of small and medium-sized enterprises (SMEs) regarding climate disclosure and offers recommendations to strengthen social and corporate governance for key stakeholders.

The Current State of Climate Change Disclosures: An Evaluation of Progress, Challenges and Solutions

Regulatory Requirements of Climate Disclosures

The Paris Agreement in 2015 established an ambitious goal to limit the increase in global average temperature to below 2°C above pre-industrial levels[1], thereby highlighting the crucial role of climate-related disclosures as an alignment with government strategies on climate change[2] and a pivotal benchmark for firms to demonstrate responsible business practices[3]. In some countries, mandatory climate change reporting for corporations is already in place when disclosing their business status. As revealed by the report of the Climate Disclosure Standards Board (CDSB), 15 G20 countries have followed TCFD guidelines for such reporting[4]. Mandatory disclosures tend to be an ongoing trend among different countries given the imminence of the climate change crisis. In view of Hong Kong, the Green and Sustainable Finance Cross-Agency Steering Group recently announced that climate-related disclosures aligned with TCFD recommendations will be mandatory across relevant sectors by 2025[5], underscoring the growing importance of such disclosures in the commercial environment. With higher government concerns over climate change mitigations, climate change disclosures have become increasingly pronounced when companies undertake licensing application of publication and capitalization processes, where climate data is a regulatory requirement in their statements. The greater the transparency through disclosing relevant data, the higher the efficiency for government and regulators to cope with climate change issues[6]. In general, compliance with climate change disclosures is anticipated to be more imperative for companies seeking to develop capabilities and investment opportunities, even if not yet mandatory.

Name of Regulators	Reporting Purposes	Reporting Requirements
United States - Securities and Exchange Commission (SEC)[7]	To provide investors with consistent, comparable and decision-useful information through increasing the transparency on climate change disclosures	Company's registration statements and annual reports MUST include (1) climate-related financial impact (2) expenditure metrics (3) discussion of climate-related impacts on financial estimates and assumptions in the financial statements
United Kingdom - Financial Conduct Authority (FCA)[8]	To improve both the quantity and quality of disclosures across the corporate sector	Premium listed commercial companies need to make TCFD disclosures in their Annual Financial Report (AFR), or to explain why not
Singapore Exchange (SGX)[9]	To mitigate climate change effects and facilitate the decision-making of investors through the use of climate information	A list of core ESG metrics is incorporated in the reporting framework in which "Environmental" metrics are included
Hong Kong Exchanges and Clearing Limited (HKEX)[10]	To facilitate the direction towards mandatory TCFD-aligned climate-related disclosures by 2025[11]	The environmental indicators are subject to a "comply or explain" principle

Table 1: Requirements for climate-related disclosures regulated by different institutions

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Investor Preference: Insights from Foreign Ownership, Company Characteristics, and Geographical Location

With the increasing number of institutional investors, firms are more likely to disclose ESG data[12]. However, there are a few points needed to clarify. First, the rise of foreign ownership will not positively raise company ESG disclosure, but crossed-listing firms usually do. Second, according to the regression model, for ESG reporting, companies' characteristics play a more vital role than country factors, for example, environmental law for listed countries. Moreover, if we consider the geographical location, European and American investors care a lot about ESG's bad and good news respectively, but both create a shock on the financial market. Despite the growing global interest in environmental, social, and governance (ESG) factors, there remains a perception that investors in the Asia Pacific region may not prioritize or value ESG-related news and information[13]. It is not surprising that Western countries are more sensitive to ESG because they have already established mandatory rules or guidelines for ESG reporting, and Asia countries are left behind. And due to the high focus from Western investors, the ESG disclosure scores[14] are higher than that of the Asia region. However, according to the report from Fidelity International[15], it is expected that the ESG reporting rate for cooperation in China will rise from 63% to 93% in 2026. Being a strong Asian country, China is believed to be a booster in leading other Asian countries to concern more about the disclosure of ESG report[16].

Well-developed ESG Framework	**Rapidly Improving ESG Framework**	**ESG Framework at Developing Stage**	**ESG Framework at Early Stage**
(Score Range 28–30)	(Score Range 24–27)	(Score Range 20–23)	(Score Range Below 20)
Norway	Germany	Singapore	Russia
Sweden	Italy	India	Indonesia
Finland	USA	China	Thailand
Denmark	Australia	New Zealand	Nigeria
UK	Switzerland	Philippines	Vietnam
Belgium	Canada	Malaysia	
France	Japan	Argentina	
	Brazil		
	South Africa		

Source: The authors own compilations based on the classification of ESG framework discussed in methodology.

Note: ESG = environmental, social and governance.

Table 2: Classification of countries based on updated benchmarking score

12 Yu, Ellen Pei-yi, and Bac Van Luu. 2021. "International Variations in ESG Disclosure – Do Cross-Listed Companies Care More?" *International Review of Financial Analysis* 75 (May): 101731. https://doi.org/10.1016/j.irfa.2021.101731.

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Unlocking Opportunities: The Rise of Green Financing for Climate-Resilient Companies

As the climate change problem is a global crisis, companies are facing a growing demand for insightful, consistent and transparent climate data during the decision-making process of investors and governors. Given the high correlation between climate impact management and legal risks, investors are more willing to consider the companies with low climate impact vulnerability revealed in the reports so as to reduce related risks[17]. In other words, the higher the ability to comply with the recommended climate change disclosure framework like TCFD, the greater the opportunities to obtain financial support from investors and other financing institutions.

For example, the Institutional Investors Group on Climate companies with better disclosures and clear frameworks Change (IIGCC), a group that places a lopsided focus on investing the portfolios aligned with the goals of the Paris Agreement, has represented $33 trillion in assets[18]. In Hong Kong, the amount of green and sustainable debts, and sustainability-linked loans have proliferated four times within a year from 2020[19]. These prove that more investors are hoosing to allocate their capital to for managing climate-related risks and opportunities. In today's financial markets, a sizable number of green financing options have emerged for firms, especially small and medium enterprises (SMEs). With increasing financing opportunities, it raises the companies' incentive to disclose their climate management status.

Green Financing Options	Investment Company/ Asset Management Firm/ Bank
Use of Proceeds (UoP) bonds[20] • Green Bonds (Mutual Funds or Exchange-traded Funds (ETFs)) • Sustainability Bonds • Blue Bonds • Climate Resilience Bonds	• Allianz S.E.[21]/ Axa S.A.[22]/ State Street Corp.[23]/ TIAA-CREF[24]/ AXA Investment Managers[25]/ HSBC[26]/ The European Bank for Reconstruction and Development[27]
Sustainability-linked Loan (SLBs)[28]	• HSBC[29]/ Bank of China[30]/ Crédit Agricole Corporate and Investment Bank[31]/ Blackstone[32]
Transition Bonds	• The European Bank for Reconstruction and Development[33]/ Mitsubishi Heavy Industries (MHI) Group[34]/ Asian Development Bank (ADB)[35]

Table 3: Green financing options

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Climate Reporting Challenges for SMEs in Hong Kong: A Case Study on Climate Change Risk and Cost Considerations

SMEs occupied over 90% of business units in Hong Kong, which is important for us to consider their ESG reporting situation. Compared to large firms, SMEs obviously have fewer resources. Fighting climate change risks always incurs a huge amount of cost. For example, the technological producer Samsung, the bank in Portugal Caixa Geral de Depósitos, anticipated $110 million (USD) and $1.8 million (USD) to cover the potential cost from the tropical cyclone and rise of average temperature[36]. Not only the cost of potential risks, SMEs also need to take the cost from management strategies and ESG external reporting into account. Fortunately, the HKMA has announced that companies who are concerned with sustainable development can apply for issuing green bonds to get at most $800,000 to pay for external auditing[37], for example, (ESG scoring, certification and so on). However, the cost of adaptation to climate change is still unaffordable for SMEs. Although some SMEs disclose ESG reports[38], the general quality of reporting is low (scored 1.98 out of 4), especially for the KPI, environmental and natural resources, which scored the lowest. Besides, according to the HKEX industrial catalogs, the Industrial Goods sector performed best in reporting while the Telecommunication sector performed the worst due to the strict regulation of carbon emission for production.

Hence, it shows that the nature of business will affect the reporting transparency for SMEs.

Empowering Non-Listed SMEs in Hong Kong with Green Finance: Collaborative Efforts by Green and Sustainable Finance Cross-Agency Steering Group and CMA in 2023

The Green and Sustainable Finance Cross-Agency Steering Group has partnered with Carbon Disclosure Project (CDP) to enhance climate data availability and sustainability reporting in Hong Kong. As part of this collaboration, they have developed the Climate and Environmental Risk Questionnaire for Non-listed companies/SMEs to aid their sustainability reporting processes and raise their sustainability visibility to lenders, investors and supply chain clients for better access to sustainability financing. The questionnaire is easy to use and comes in three versions to cater to the reporting corporates' size and sophistication. The Steering Group and CDP have also developed comprehensive guidance and learning materials for the use of the template and will arrange targeted capacity-building sessions starting in Q1 2023. This collaboration will benefit SMEs by providing them with the tools and resources needed to commit to and accelerate environmental action, contributing positively to the global emissions reduction agenda.

In 2023, the Chinese Manufacturers' Association of Hong Kong (CMA) launched a website to promote green finance among non-listed Hong Kong businesses[39]. The website serves as a platform to share knowledge and provide information on green financial instruments, such as the Green Finance Calculator, which can help SMEs to understand their eligibility for green project credit, green bonds, and green loans. The website also connects SMEs with financial and professional service providers, sustainability experts and green finance certification bodies. Stakeholders can publish their profiles for free in the directories of the website. Additionally, the project will develop five industry-specific guidebooks to help SMEs access green finance. These guidebooks will cover topics such as self-assessment, green technology application, green finance framework building and green project and fundraising management. This initiative aims to enhance the sustainable competitiveness of SMEs by providing them with the necessary information and support to raise debt financing for green investment projects.

36 Goldstein, Allie, Will R. Turner, Jillian Gladstone, and David G. Hole. "The Private Sector's Climate Change Risk and Adaptation Blind Spots." Nature Climate Change 9, no. 1 (December 10, 2018): 18–25. https://doi.org/10.1038/s41558-018-0340-5.

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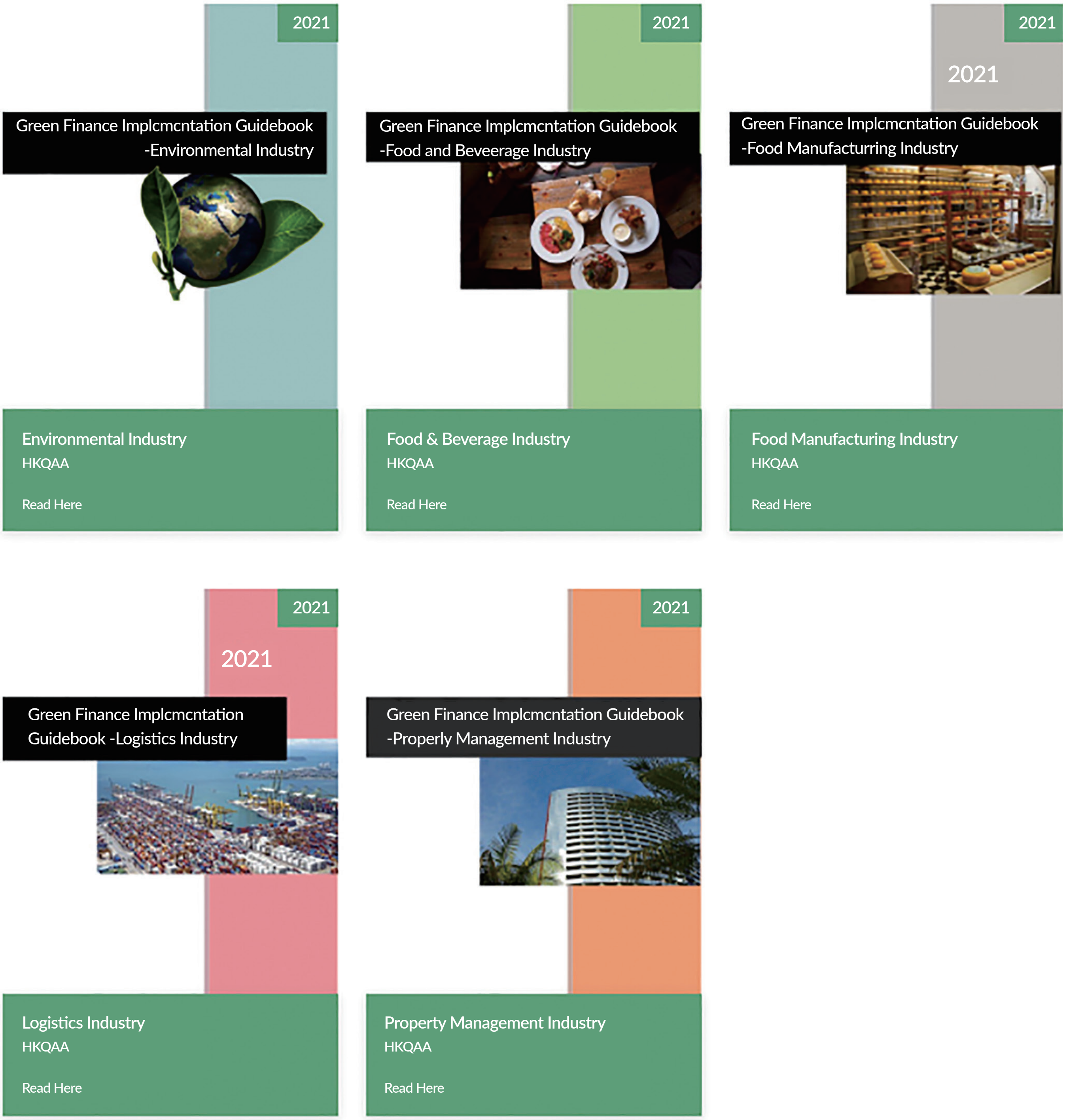
39 "Hong Kong Green Finance Solution Platform," n.d. https://greenfinance.hk/index.php.



Graph 1: Illustration of Green Finance Implementation Guidebook in 5 Industries

Debating the Climate Change Disclosures: Are We Overemphasizing Them at the Expense of Real Action?

We disagree that the world is too focused on climate change disclosures, as the benefits brought by such disclosures outweigh the disadvantages to corporations, investors and governments.

The Costs and Benefits of Climate Change Disclosures: Impact on Business Sustainability, ESG Investments, and Financial Performance

Climate change disclosures can impact corporate profitability and business sustainability, while also enabling negative and positive screening of ESG investments. Climate change disclosures provide information for conducting climate risk assessments and making informed business strategies and investments related to climate-related risks and opportunities[40], which are mainly categorized as physical and transitional climate risks that can significantly impact businesses, such as damage to physical assets, supply chain disruptions, increased costs and decreased revenue. Managing these risks can enhance a company's resilience and sustainability, leading to improved financial performance and long-term success. However, reports from the Carbon Disclosure Project and ERM indicate that climate change risks will cost businesses up to US$120 billion in the next five years[41]. Over 200 of the world's largest listed companies predict that climate change could cost them a combined total of almost $1 trillion[42], with corporate issuers spending more than US$0.5 million annually on climate-related disclosure, institutional investors spending US$1.3 million annually to collect, analyze and report climate data to inform their investment decisions, demonstrating the significant costs of climate change to businesses[43].

Climate risk assessments enable both negative and positive screening of ESG investments for investors[44]. Positive screening involves selecting investments based on positive ESG attributes to promote sustainable practices[45], as demonstrated by BlackRock's implementation of explicit ESG objectives and a variety of ESG criteria, including its uses of the MSCI ESG Fund Rating and MSCI ESG Quality Score to measure the ability of a fund's underlying holdings to manage key medium-to long-term risks and opportunities[46].

On the other hand, negative screening involves excluding industry that are considered to have a high risk of regulatory or legal challenges, such as fossil fuels or tobacco[47], and screening for companies that have had any sexual harassment allegations in the past 6 years as well. Robeco is another example of an asset management firm that is dedicated to negative screening, using it to identify poor performers on ESG factors, while both negative and positive screening is widely used tools that help investors to align their investments with their values and ethics, reduce risks and encourage companies to improve their ESG performance[48].

The Urgent Need for Climate Action: Impacts, Risks, and the Role of Data Disclosure

The climate change crisis has always ranked as one of the highest concerns worldwide due to its high imminence and broad influences. In 2020, it was the year with the highest temperature on record. Over 50 million people globally suffered directly from more frequent extreme weather such as floods, droughts, storms and wildfires[49]. United Nations Secretary-General António Guterres has described the climate change issue as "a red code for humanity...... and putting billions of people at immediate risk"[50], emphasizing the importance of coping with this global crisis. Although over 200 parties pledged to

40 PricewaterhouseCoopers. "SEC Climate Risk Disclosures and Your Company." PwC, n.d. https://www.pwc.com/us/en/services/esg/library/sec-climate-disclosures.html

41 "The Real Cost of Climate Change for Businesses," n.d. https://trendsresearch.org/insight/the-real-cost-of-climate-change-for-businesses/.

42 Green, Matthew. "World's Biggest Firms Foresee $1 Trillion Climate Cost Hit." U.S., June 4, 2019. https://www.reuters.com/article/us-climate-change-companies-disclosure/worlds-biggest-firms-foresee-1-trillion-climate-cost-hit-idUSKCN1T50CF.

43 ERM. "Survey Reveals Costs and Benefits of Climate-Related Disclosure for Companies and Investors," n.d. https://www.erm.com/news/survey-reveals-costs-and-benefits-of-climate-related-disclosure-for-companies-and-investors/.

44 "ESG Investing and Climate Change," n.d. https://climatecheck.com/risks/finance/esg-investing-and-climate-change.

45 OCED. "ESG Investing and Climate Transitio Market Practices, Issues and Policy Considerations., n.d. https://www.oecd.org/finance/ESG-investing-and-climate-transition-market-practices-issues-and-policy-considerations.pdf.

46 BlackRock. "ESG Methodology | BlackRock," n.d. https://www.blackrock.com/us/financial-professionals/tools/esg-360-methodology.

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48 Robeco.com - the Investment Engineers. "Sustainable Investing - Negative Screening," March 7, 2023. https://www.robeco.com/en-hk/glossary/sustainable-investing/negative-screening.

49 United Nations. Adaptation Gap Report 2020, n.d. https://wedocs.unep.org/bitstream/handle/20.500.11822/34726/AGR_en.pdf?sequence=35.

50 "Secretary-General Calls Latest IPCC Climate Report 'Code Red for Humanity', Stressing 'Irrefutable' Evidence of Human Influence | UN Press." n.d. Press.un.org. Accessed June 25, 2023. https://press.un.org/en/2021/sgsm20847.doc.htm#:~:text=Today%27s%20IPCC%20Working%20Group%201.

achieve the goal of limiting the temperature to 1.5°C in the 2015 Paris Agreement, we are hitting the temperature baseline at a much faster pace which urges us to take a more ambitious initiative to reduce the impacts of climate change[51]. For example, lower the greenhouse gas emissions, halting deforestation and using nature-based solutions. In the meantime, the public is becoming concerned and aware of the climate change issue. From the results of the Peoples' Climate Vote, the largest survey of public opinion on climate change with a sample size of 1.2 million individuals across 50 countries, nearly two-thirds (64%) of people believe that climate change is a global emergency, implying a clear and compelling consensus that urgent actions are needed in response to the climate change crisis[52].

The issue of climate change entails significant benefits and risks for the world that are more far-reaching than anticipated. According to the scientific research "Global Non-Linear Effect of Temperature on Economic Production", it is estimated that there would be approximately 23% of average global income loss by 2100 if the climate change problem remained unmitigated[53]. On top of that, 138,000 premature deaths per year will be avoided due to proactive actions taken on climate change, generating US $244 - 564 billion in savings per year[54]. Thus, there is a desperate demand to tackle the climate change crisis to minimize the potential risks and losses.

Since the existence of extreme weather and global warming has persistently affected the world on a severe threshold, it induces people, especially the policymakers in different countries, to act proactively in mitigating the climate change crisis. Accordingly, climate data disclosures by organizations will be a crux to help facilitate the supervision on the effectiveness of climate change policies and enable the public to conduct decision-making with a higher sustainable sense[55].

The Vital Role of Climate Data Disclosure in Promoting Sustainable Economic Growth and Preventing Greenwashing

It is indeed important for stakeholders to have access to accurate and reliable climate change data at both the micro and macro levels to make informed decisions, as investors, lenders, insurers and other stakeholders can better understand the risks and opportunities associated with climate change and take appropriate actions to manage them. Following the current disclosure regulations for measuring and reporting climate data, this could provide companies with a transparent framework for disclosing their climate-related information. For example, climate change data, including Scope 1, 2 and 3 emissions and the above-mentioned TCFD model, are increasingly being measured, reported and regulated using internationally recognized standards. These standards provide a clear framework for companies to calculate and disclose their climate-related information, which can be used by investors and fund analysts to assess the sustainability prospects of companies and to avoid double-counting and greenwashing issues. These issues can create misleading impressions of a company's environmental impact. By following these established methods of disclosure, companies can provide investors with accurate and reliable information about their climate-related risks and opportunities, which can inform investment decisions and promote more sustainable economic growth.

Different countries have developed their own disclosure standards and constantly working on the common goal of ensuring accurate climate data disclosure, for example, the development of the Common Ground Taxonomy (CGT) by the International Platform on Sustainable Finance (IPSF)[56]. For Hong Kong's regulations, regulators such as the Hong Kong Monetary Authority (HKMA) has already built up the structure and guidelines of green taxonomy and are providing a climate change data database to provide a free and reliable source for the public and business to use for estimating the climate change. The green taxonomy introduced by HKMA serves multiple purposes, including providing guidance and standards to issuers and investors, attracting international climate-oriented capital, enabling data disclosure, assessing

51 Ibid.
52 "The Peoples' Climate Vote | United Nations Development Programme." n.d. UNDP. https://www.undp.org/publications/peoples-climate-vote.
53 Burke, Marshall, Solomon M. Hsiang, and Edward Miguel. 2015. "Global Non-Linear Effect of Temperature on Economic Production." Nature 527 (7577): 235–39. https://doi.org/10.1038/nature15725.
54 "Raising Awareness on Climate Change and Health." 2023. July 5. https://www.who.int/europe/activities/raising-awareness-on-climate-change-and-health.
55 "Disclosing through CDP." n.d. Accessed June 22, 2022. https://cdn.cdp.net/cdp-production/comfy/cms/files/files/000/006/049/original/CDP_Benefits_of_Disclosure_brochure_2022.pdf.
56 "Prototype of a Green Classification Framework for Hong Kong." n.d. Accessed June 25, 2023. https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2023/20230530e1a1.pdf.

environmental risks and supporting climate goals. The taxonomy aims to steer the market towards sustainability and prevent greenwashing while increasing investment flows into the domestic market. It also helps to harmonize data disclosure and provides valuable information on climate-related risks for risk assessment specialists within the financial sector. Ultimately, the green taxonomy supports the achievement of Hong Kong's emissions reduction targets in accordance with the Paris Agreement[57].

In conclusion, countries and governments are revising and updating the global disclosure standard and making sure their economies' disclosure is aligned with the world standard. It proves the importance of ESG disclosure and how it helps with making informed decisions in business. Data from the PwC survey which captured the view of over 300 global investors and asset managers proved this point of view: over 75% of them mentioned considering the way of managing ESG risk and opportunities as an important factor of making their investment decision[58]. The case study of the Volkswagen Dieselgate scandal also highlighted the serious consequences of ignoring environmental disclosure. Despite the advantages of turbocharged diesel engines, which are more economical and produce less CO2, they emit too many toxic substances to meet emission standards. Rather than developing a different engine, Volkswagen chose to equip its cars with cheating software to hide the fact that they were anything but clean under normal conditions. This deliberate deception caused huge financial losses for shareholders, tens of billions of dollars in damages and fines, ongoing lawsuits and damage to the reputation of the company. This demonstrates the importance of taking environmental disclosure seriously and the severe consequences that can result from failing to do so[59].

Refutation of Opposing Viewpoints

What is the role of climate disclosure in geopolitical shifts, particularly in relation to energy crises?

Some argue that focusing on climate disclosure could play a role in geopolitical shifts. It is important to recognize that this is not the primary reason behind such shifts, particularly when it comes to energy crises. The recent unprecedented energy crisis, for instance, was caused by severe and unlikely circumstances, such as the reduction in gas supplies from Russia due to the Ukraine war[60], and a colder winter in the EU leading to an increase in demand. These factors had little to do with climate disclosure[61].

Furthermore, while focusing on climate disclosure could lead to countries transitioning to low-carbon economies, it is not a guarantee that this will happen. Even if countries do transition to low-carbon economies, the impact on resource demand will vary depending on the country's natural resources. For example, oil-exporting economies may have to deal with stranded assets[62], while mineral-exporting countries may benefit from a green transition by selling semiconductors for making solar power panels[63].

It is also important to note that non-renewable energy sources will eventually be depleted, regardless of the focus on climate disclosure. The Paris Agreement did mention that developed countries will phase out non-renewable energy sources, but this is a gradual process that will take time to implement[64]. Therefore, while climate disclosure is an important issue, it is not the primary reason for geopolitics, especially when it comes to energy crises.

57 "The Real Cost of Climate Change for Businesses," n.d. https://trendsresearch.org/insight/the-real-cost-of-climate-change-for-businesses/.
58 PricewaterhouseCoopers. "ESG Investor Survey: The Economic Realities of ESG." PwC, n.d. https://www.pwc.com/gx/en/services/audit-assurance/corporate-reporting/esg-investor-survey.html.
59 Clerck, Roy De. 2022. "The Biggest ESG-Failures in Recent History! - Empact." February 24, 2022. https://empact.nu/en/2022/02/the-biggest-esg-failures-in-recent-history.
60 IEA. "Global Energy Crisis – Topics - IEA," n.d. https://www.iea.org/topics/global-energy-crisis.
61 Bordoff, Jason. "Why This Energy Crisis Is Different." Foreign Policy, October 20, 2021. https://foreignpolicy.com/2021/09/24/energy-crisis-europe-gas-coal-renewable-prices-climate/.
62 Reuters. 2020. "Pump or Dump? With Oil in Decline, Africa Ponders Its Energy Future," July 2, 2020, sec. Industry, Materials and Utilities. https://www.reuters.com/article/africa-oil-climatechange/pump-or-dump-with-oil-in-decline-africa-ponders-its-energy-future-idUSL8N2E9259.
63 McKinsey. The net-zero transition Report, n.d. https://www.mckinsey.com/~/media/mckinsey/business%20functions/sustainability/our%20insights/the%20net%20zero%20transition%20what%20it%20would%20cost%20what%20it%20could%20bring/the-net-zero-transition-what-it-would-cost-and-what-it-could-bring-final.pdf.
64 Ambrose, Jillian, and Jillian Ambrose Energy correspondent. 2023. "Phaseout of Coal Power Far Too Slow to Avoid 'Climate Chaos', Report Finds." The Guardian, April 5, 2023, sec. Environment. https://www.theguardian.com/environment/2023/apr/06/coal-power-phaseout-far-to-slow-climate-chaos-china-global.

Will Climate Disclosure Detract Business from Other Governance Issues?

With the increasing awareness on climate disclosure, people are worried about the over-emphasis on climate disclosure will detract from other governance issues of a firm. However, research findings suggest that focusing on climate change disclosures could be complementary to other corporate governance issues and even have positive impacts on them. An investigation of the governance-related nature of climate change reporting in annual and sustainability reports was conducted on a sample of Malaysian publicly traded firms. According to the study, businesses employed language in their corporate narratives to control stakeholder perceptions and boost their legitimacy by reporting on governance-related climate change concerns[65].

Besides, research on energy companies operating in Africa and Asia also discovered that factors such as board size, board diversity, multinational status, profitability, cross-listing status, membership in the United Nations Global Compact and the Human Development Index of the nations in which businesses operate are factors that influence disclosure of climate change[66]. Therefore, this evidence and research show that emphasis on climate change disclosures will not detract from other corporate governance issues but helps to better performance in corporate governance.

Can SMEs Afford to Implement Climate Disclosure Practices?

Besides worrying about the shift of focus, people are worried about the ability to handle the cost of detailed climate disclosure for SMEs. People argue that it could be better for SMEs to focus on fundraising and business growth instead of climate disclosure. However, it is always important for businesses to equip themselves with climate disclosure standards and knowledge at the same time loans are offered for SMEs to apply for their green business of business growth. For Hong Kong, green bonds and loans are offered for SMEs to apply for their green business and projects. It is always a better practice to build up the business in an eco-friendly way. Therefore, it should not be a concern for SMEs not doing climate disclosure well and shifting their focus to other goals.

As an example in Lithuania, as mentioned by Ronaldas Kubilius, the Senior Manager of ESG Services in PwC Lithuania, "most of the local large companies and an increasing number of medium-sized enterprises in Lithuania already understand that it can be treated as an investment, with its returns to be measured by the price premium payable by investors, better performance driven by higher motivation of employees, cost savings due to a more sustainable business model or future savings in pollution taxes, positive response from consumers and other market players[67]." It proved that investing in better climate disclosure practices is an investment for companies and SMEs that could utilize the resources of green load and green bonds in the financial market at the starting stage.

In summary, we disagree that the world is too focused on climate disclosure because we believe that the benefits of proper disclosure outweigh the potential consequences. These benefits include: (1) disclosure affects profitability and ESG investment; (2) mitigating the climate change crisis is urgent; and (3) understanding climate risk leads to better investment decisions.

As global awareness and regulatory framework around climate disclosure continue to gain momentum, it is understandable to question whether the world is too fixated on this issue. Therefore, we are going to suggest some constructive recommendations for governments, corporations and investors to increase public awareness of social and governance disclosure.

65 Ahmad, N.N., & Hossain, D.M. (2017). Governance related corporate climate change disclosures: evidences from selected public listed companies in Malaysia.

66 Asare, Emmanuel Tetteh, King Carl Tornam Duho and Edmund Narh Amegatcher. "Climate Change Reporting and Corporate Governance among Asian and African Energy Firms." IOP Conference Series: Earth and Environmental Science 997 (2022): n. pag.

67 PricewaterhouseCoopers. 2021. "Companies Failing to Act on ESG Issues Risk Losing Investors, Finds New PwC Survey." PwC. 2021. https://www.pwc.com/lt/en/about/press-room/pwc-global-investor-esg-survey.html

Recommendations to Key Stakeholders

Government

Governments are crucial in promoting social and governance disclosure as they can regulate and enforce disclosure beyond just environmental concerns. This can be achieved by identifying material indicators, evaluating information disclosure[68], proposing amendments to rules, raising awareness[69], building capacities, creating a policy framework and setting the pace for sustainability reporting[70]. These steps encourage transparency[71], accountability and drive the green, social, and governance transition[72].

Governments and organizations around the world are promoting social and governance disclosure to provide investors with consistent, comparable and reliable information on the incorporation of ESG factors into investment decisions. Examples include:

Governments and organizations are making efforts to promote social and governance disclosure, which can provide valuable information for sustainable and responsible investing. Some governments are creating task forces to scrutinize ESG-related disclosures and identify misconduct[78]. The growing attention to ESG factors in investment decision-making recognizes that social and environmental impact can significantly influence financial performance and long-term value creation. By promoting disclosure, stakeholders can make more informed decisions and create positive impacts.

Regions/Countries	Potential Approaches to social and governance disclosure development
United States	• Proposed amendments to rules and reporting forms to improve disclosures by certain investment advisers • Funds that take ESG factors into consideration when making investment decisions[73 74 75]
European Union	• Implement regulations requiring mandatory ESG disclosure, such as the Sustainable Finance Disclosure Regulation • Introduce a directive that imposes duties on directors of companies to integrate due diligence into the corporate strategy[76]
Hong Kong	• Requires companies listed on the exchange to disclose their ESG reports[77] • Implement regulations requiring companies to disclose their ESG practices

Table 4: Examples in different regions/countries

68 "ESG Disclosure." n.d. www.gfoa.org. Accessed June 25, 2023. https://www.gfoa.org/esg.

69 "Does Government Have a Role to Play in Corporate Social Responsibility?" n.d. GivingForce. https://www.givingforce.com/blog/does-government-have-a-role-to-play-in-corporate-social-responsibility.

70 Atalla, George, Meghan Mills, and Julie McQueen. 2021. "Six Ways That Governments Can Drive the Green Transition." Ey.com. EY. December 6, 2021. https://www.ey.com/en_gl/government-public-sector/six-ways-that-governments-can-drive-the-green-transition.

71 Truzzolino, John. 2021. "6 Steps to Building Your Environmental, Social and Governance Disclosure Strategy." StrategicCFO360. November 6, 2021. https://strategiccfo360.com/6-steps-to-building-your-environmental-social-and-governance-disclosure-strategy/.

72 Atalla, George, Meghan Mills, and Julie McQueen. 2021. "Six Ways That Governments Can Drive the Green Transition." Ey.com. EY. December 6, 2021. https://www.ey.com/en_gl/government-public-sector/six-ways-that-governments-can-drive-the-green-transition.

73 US Securities and Exchange Commission. "SEC Proposes to Enhance Disclosures by Certain Investment Advisers and Investment Companies About ESG Investment Practices." US Securities and Exchange Commission press release, May 22, 2022. On the US Securities and Exchange Commission website. https://www.sec.gov/news/press-release/2022-92 , accessed Jun 20, 2023.

74 US Securities and Exchange Commission. Statement on ESG Disclosures Proposal, May 25, 2022. https://www.sec.gov/news/statement/gensler-statement-esg-disclosures-proposal-052522.

75 US Securities and Exchange Commission. Enhanced Disclosures by Certain Investment Advisers and Investment Companies About Environmental, Social, and Governance Investment Practices, June 17, 2022. https://www.federalregister.gov/documents/2022/06/17/2022-11718/enhanced-disclosures-by-certain-investment-advisers-and-investment-companies-about-environmental.

76 European Commission. 2022. "Corporate Sustainability Due Diligence." Commission.europa.eu. 2022. https://commission.europa.eu/business-economy-euro/doing-business-eu/corporate-sustainability-due-diligence_en.

77 The Stock Exchange of Hong Kong Limited. 2022. "2022 Analysis of ESG Practice Disclosure." The Stock Exchange of Hong Kong Limited. https://www.hkex.com.hk/-/media/HKEX-Market/Listing/Rules-and-Guidance/Environmental-Social-and-Governance/Reports-on-ESGPD/esgreport_2022.pdf.

78 Houston, Carolyn, Emily B. Holland, and Leah Malone. 2023. "ESG Battlegrounds: How the States Are Shaping the Regulatory Landscape in the U.S." The Harvard Law School Forum on Corporate Governance. March 11, 2023. https://corpgov.law.harvard.edu/2023/03/11/esg-battlegrounds-how-the-states-are-shaping-the-regulatory-landscape-in-the-u-s/.

Investors

With reference to the HSBC ESG report, Asian countries (excluding Japan) are putting more capital into the fund, which showed 70% growth in ESG funds in 2021. However, among Asian countries, Japan is the leader among the ESG fund investors. It has invested $35.2 billion, which is half of all whole Asian countries' investment[79]. So, it is worth taking a look at Japan's ESG investing atmosphere and learn from their success. According to the global sustainable investment review 2020[80] , the success of Japan is not only focusing on climate change, but also putting effort into social and governance. The Tokyo Stock Exchange has revised the Corporate Governance Code and the Guidelines for Investors' and Companies' Dialogue[81], which focus more on human rights and fair treatment of labour. Apart from that, Japan's Government Pension Investment Fund has introduced three ESG indexes, where two are related to the composite of environmental, corporate governance and social, while one is related to the female workforce. After Covid-19 and the readjustment for the sharing of securities in the pension fund, the GPIF started to rebound and create a huge gain. It has aroused investor interest and more capital was put into it. To capture the capital, firms will perform better on ESG so as to be selected into the three indexes of GPIF[82].

Index Name	Founding Year	Features	Yearly Return	Returns Benchmark
FTSE Blossom Japan Index	2017[83]	• 310 Japanese securities, as of 19 June 2023[84]. • Industry-neutral approach to minimize industry bias by matching weights with those of the underlying index. • Selects Japanese companies with ESG Rating 3.3 and above. • Since 2017, it demonstrates a clear ESG standard for market participants and companies to utilize in their stewardship and engagement efforts.	+20.30% (2023)[85]	2023 Japan Large-Cap Blend Equity: +10.50%[86]
MSCI Japan ESG Select Leaders Index	2018[87]	• The Index is designed to represent high ESG-performing companies' performance. • The index aims to target sector weights that reflect the relative sector weights of the MSCI Japan IMI Index. • This is done to limit the systematic risk introduced by the ESG selection process. • The overall target of the index is to cover 50% of the parent index.	+8.31% (2023)[88]	2023 Japan Large-Cap Blend Equity: +10.50%[89]
MSCI Japan Empowering Woman Index	2017[90]	• MSCI Japan Empowering Women Index (WIN) is based on MSCI Japan IMI Top 700 Index. • The parent index includes large, mid, and small-cap securities in the Japanese markets. • The Index represents Japanese companies committed to promoting gender diversity and maintaining financial quality. • The index includes companies leading their GICS® sector groups in supporting women's participation and adopting diversity policies[91].	-6.97% (2022)[92]	2022's MSCI Japan IMI Top 700: -3.11%

Table 5: ESG index from GPIF

79 HSBC.亞洲ESG投資 迎頭趕上 [Asia investment on ESG is growing quickly].Hong Kong:HSBC,2022 ,https://www.assetmanagement.hsbc.com.hk/-/media/files/attachments/hongkong/investment-academy/esg-essentials/esg-investing-in-asia-the-latecomer-is-catching-up-hk.pdf.

80 Global Sustainable Investment Alliance. Global Sustainable Investment Review 2020. n.d. https://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf.

81 "Japan's Corporate Governance Code Seeking Sustainable Corporate Growth and Increased Corporate Value over the Mid-to Long-Term Tokyo Stock Exchange, Inc. Provisional Translation the Revised Code with Track Changes from the Previous Version of the Code." 2021. https://www.jpx.co.jp/english/news/1020/b5b4pj0000046kxj-att/b5b4pj0000046l0c.pdf

82 "全球最大養老基金：日本GPIF的ESG投資之道 [The Way of ESG Investment by Japan's GPIF, the World's Largest Pension Fund]." n.d. www.miotech.com. Accessed June 25, 2023. https://www.miotech.com/zh-HK/article/67.

83 "NYK Selected for FTSE4Good Index and FTSE Blossom Japan Index | NYK Line." 2021. NYK Line. August 4, 2021. https://www.nyk.com/english/news/2021/20210802_01.html.

84 "FTSE Blossom Japan Index Series." n.d. FTSE Russell. https://www.ftserussell.com/products/indices/blossom-japan

85 "IFreeETF FTSE Blossom Japan Index, 1654:TYO:JPY Performance - FT.Com." n.d. https://markets.ft.com/data/etfs/tearsheet/performance?s=1654:TYO:JPY.

86 Ibid.

87 MSCI. 2023. "MSCI Japan ESG Select Leaders Index (JPY)." MSCI. Accessed July 4, 2023. https://www.msci.com/documents/10199/1aaa3df9-32c8-4554-8e3b-f9b41c4d0a70.

88 "IFreeETF MSCI Japan ESG Select Leaders Index, 1653:TYO:JPY Performance - FT.Com." n.d. https://markets.ft.com/data/etfs/tearsheet/performance?s=1653:TYO:JPY.

89 Ibid.

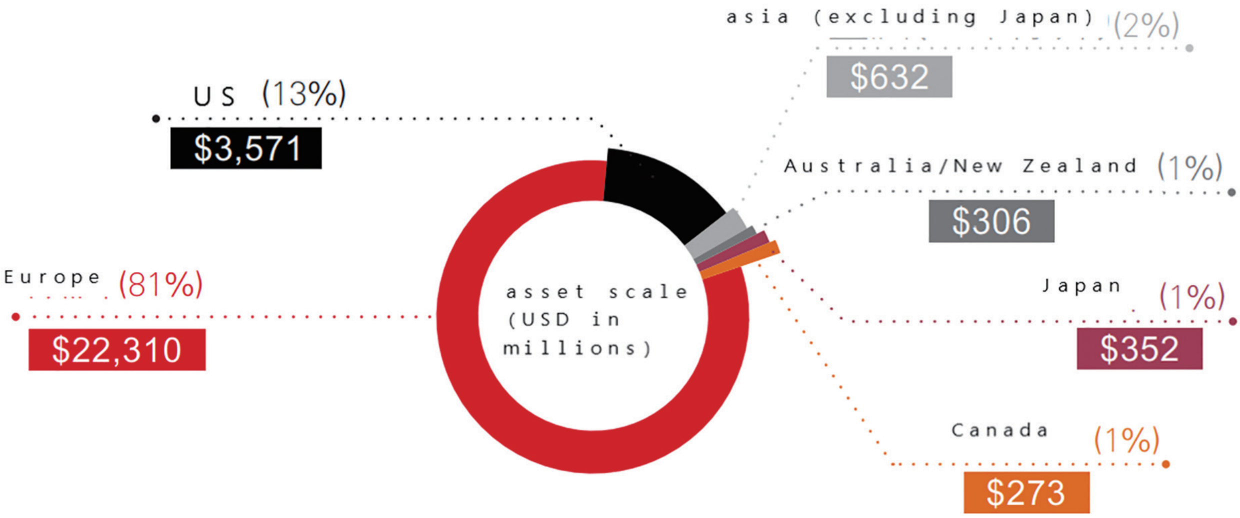
90 MSCI. 2023. "MSCI Japan ESG Select Leaders Index (JPY)." MSCI. Accessed July 4, 2023. https://www.msci.com/documents/10199/1aaa3df9-32c8-4554-8e3b-f9b41c4d0a70.

91 Ibid.

92 Ibid.

Also, the Japanese government has announced that the percentage of female managers for the pro-listed companies in the prime market of Tokyo Stock Exchange, Inc. should not be less than 30% in 2030. Also, the MSCI Japan Empowering Women Select Index[93] has disclosed the gender diversity data for Japan by focusing on the top 700 market-capitalized Japanese companies, so it can enhance social monitoring and transparency on the female workforce participation rate.

Japan's steps on Social and Governance investment are worthy for Hong Kong investment institutions to pay attention to and learn from it.



Graph 2: HSBC report for different countries' investment amount on ESG

Corporations

From the proper climate change disclosure made by companies, social impact initiatives can be developed as a strategy to improve corporate sustainability. Mitigating the climate change crisis requires concerted and proactive actions from everyone on Earth. Therefore, we recommend that companies to think and plan from a broader perspective when designing their strategies for climate change disclosures. By contributing their resources with others to help reduce climate change impacts in concert, companies can achieve more than they would individually. A good example of a company taking a broader approach is Apple, an eminent multinational technology company. In 2019, Apple launched a campaign to empower under-resourced communities to achieve sustainability, economic growth and social impact. The company embarked on 10 renewable power projects in countries such as Colombia, Israel and Nigeria, helping to establish sustainable and clean-energy-accessible communities[94].

Climate change presents both risks and opportunities for businesses. To capitalize on these opportunities, companies could utilize the data collected to identify potential business opportunities. Below are some corporate examples of their actions taken and initiatives.

93 "MSCI Japan Empowering Women (WIN) Select Index." n.d. Www.msci.com. Accessed June 25, 2023. https://www.msci.com/our-solutions/indexes/japan-empowering-women-select-index.

94 Apple, Environmental Progress Report Covering fiscal year 2021, n.d. https://www.apple.com/environment/pdf/Apple_Environmental_Progress_Report_2022.pdf.

Initiatives	Example(s)
Transform into regenerative business	Walmart : • Its 2020 ESG report outlines its intention to restore, renew and replenish the environment and society. • Walmart plans to achieve this goal by investing in regenerative agriculture, sustainable packaging and renewable energy[95]. • Kathleen Mclaughlin, the executive vice president and chief sustainability officer of Walmart, stated that the company's vision is to transform supply chains to be regenerative and work in harmony with nature. • Walmart's commitment to reducing carbon emissions through its ESG report is likely to gain support from investors and customers who value sustainability. • Voluntary environmental commitments can act as a driver for sustainability in a company's supply chain[96].
Cooperation with businesses	CLP Group x TGOOD Electric Company Limited : • The CLP group has established a joint venture with TGOOD Electric Company Limited to develop electric vehicle charging infrastructure in the Greater Bay Area[97]. • This initiative demonstrates the company's commitment to reducing carbon emissions and opens up a new revenue stream. • By disclosing such initiatives, companies can enhance their reputation as responsible corporate citizens and attract investors looking for sustainable investment opportunities. • It is essential for businesses to consider the social contribution they can make through their climate-related disclosures.

Table 6: Business opportunities of climate change disclosure

Conclusion & Prospect

The Paris Agreement has emphasized the need for climate change disclosures to align with government strategies and demonstrate responsible business practices. Mandatory climate change reporting is already in place in some countries, and compliance is expected to become increasingly important. Companies that comply with recommended climate change disclosure frameworks, such as the TCFD, have greater opportunities to obtain financial support from investors. However, SMEs face challenges in disclosing their ESG reports due to limited resources. To aid sustainability reporting processes and raise visibility, several initiatives have been launched to enhance the sustainable competitiveness of SMEs.

Climate change disclosures provide information for conducting climate risk assessments, making informed business strategies and investments and enabling negative and positive screening of ESG investments. Despite the significant costs of climate change disclosures to businesses, compliance is essential for corporate profitability and business sustainability. The climate change crisis has significant benefits and risks for the world that are more far-reaching than anticipated, and there is a desperate demand to tackle the climate change crisis to minimize potential risks and losses. Accurate and reliable climate change data at both the micro and macro levels enable stakeholders to make informed decisions and better understand the risks and opportunities associated with climate change.

95 Walmart. Walmart Sets Goal to Become a Regenerative Company. n.d. https://corporate.walmart.com/newsroom/2020/09/21/walmart-sets-goal-to-become-a-regenerative-company.

96 Kirveennummi, Maija. "Saving the Baltic Sea - Voluntary Environmental Commitment as a Driver for sustainability in company's supply chain." (2018).

97 "Media Release CLP and TGOOD to Form Joint Venture to Develop Electric Vehicle Charging Infrastructure in Greater Bay Area." 2022. https://www.clp.com.cn/wp-content/uploads/2022/04/20220428_en_final3.pdf.

Different countries have developed their own disclosure standards and are working towards ensuring accurate climate data disclosure. The importance of ESG disclosure is evident from surveys of global investors and asset managers, and the Volkswagen Dieselgate scandal highlights the severe consequences of ignoring environmental disclosure. SMEs may worry about the cost of detailed climate disclosure, but it is always important to equip themselves with climate disclosure standards and knowledge at the same time of business growth. Green bonds and loans are offered for SMEs to apply for their green business and projects. Investing in better climate disclosure practices is an investment for companies and SMEs could utilize the resources of green loans and bonds in the financial market at the starting stage.

Governments play a critical role in promoting social and governance disclosure by regulating and enforcing disclosure beyond just environmental concerns, identifying material indicators, evaluating information disclosure, proposing amendments to rules, raising awareness, building capacities, creating a policy framework and setting the pace for sustainability reporting. Investors are putting more capital into ESG funds, and Japan is the leader among Asian countries in ESG fund investment. Japan's success in ESG investing is not only focused on climate change but also puts effort into social and governance.

As discussed above, climate change disclosure is a necessary first step towards addressing the critical issue of climate change, which has become a significant and imminent concern in the past decades. However, it is important to recognize that sustainability is a multifaceted issue that requires a comprehensive approach across environmental, social and governance factors. Companies and all sectors of society must adopt a holistic approach to sustainability in creating long-term value for their stakeholders and contributing to a more sustainable future. Looking towards the future, we expect to see more companies and governments better manage all the crucial areas, or even unearth new opportunities from climate change disclosure so as to create a truly sustainable future for all.

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Photo Gallery

The top six teams were invited to present their papers on 16 September 2023 and compete for the Best Presentation Award and Audience's Favourite Team Award.

Team 1 to Team 6

Team 1

(From left) Huey Lee and Chloe Lee

The University of Hong Kong

Team 4

(From left) Miki Ng, Ken Yu and Jilly Wong

The Hong Kong University of Science and Technology

Team 2

(From left) Selina Wu and Yannie Kum

The University of Hong Kong

Team 5

(From left) Michelle Chin and Venus Tsang

The University of Hong Kong

Team 3

(From left) Letitia Wong, Lucine Ho, Emily Chen and Fanny Lo

The Chinese University of Hong Kong and The University of Hong Kong

Team 6

(From left) Sandy Ma, Karen Tam, Kelly Cheung and Kelly Chan

The Chinese University of Hong Kong, The Hang Seng University of Hong Kong and The University of Hong Kong

Awardees of Paper Competition

Alson Law FCG HKFCG, Institute Company Secretaries Panel member, presenting certificates to the awardees of Paper Writing Competition 2023 in appreciation of their achievement.

Best Paper Award

Yannie Kum and Selina Wu

The University of Hong Kong

(From left) Yannie Kum and Selina Wu

First runner-up

Chloe Lee and Huey Lee

The University of Hong Kong

(From left) Huey Lee and Chloe Lee

Second runner-up

Kelly Chan, Kelly Cheung, Sandy Ma and Karen Tam

The Chinese University of Hong Kong, The University of Hong Kong and The Hang Seng University of Hong Kong

(From left) Sandy Ma, Karen Tam, Kelly Cheung and Kelly Chan

Ellie Pang FCG HKFCG(PE), Institute Chief Executive, presenting the Merit Certificates to awardees of Paper Competition 2023.

Merit

Emily Chen, Lucine Ho, Fanny Lo and Letitia Wong

The University of Hong Kong and The Chinese University of Hong Kong

(From left) Fanny Lo, Letitia Wong and Lucine Ho

Merit

Miki Ng, Jilly Wong and Ken Yu

The Hong Kong University of Science and Technology

(From left) Ken Yu, Jilly Wong and Miki Ng

Merit

Michelle Chin and Venus Tsang

The University of Hong Kong

(From left) Michelle Chin and Venus Tsang

Awardees of Paper Presentation

Matthew Young FCG HKFCG(PE), Institute Qualifications Committee Vice-Chairman, presenting certificates to the awardees of Paper Presentation 2023 in appreciation of their achievement.

Best Presentation Award

Yannie Kum and Selina Wu
The University of Hong Kong

(From left) Yannie Kum and Selina Wu

First runner-up

Kelly Chan, Kelly Cheung, Sandy Ma and Karen Tam
The Chinese University of Hong Kong, The University of Hong Kong and The Hang Seng University of Hong Kong

(From left) Karen Tam, Sandy Ma, Kelly Cheung and Kelly Chan

Second runner-up

Miki Ng, Jilly Wong and Ken Yu
The Hong Kong University of Science and Technology

(From left) Ken Yu, Jilly Wong and Miki Ng

Ellie Pang FCG HKFCG(PE), Institute Chief Executive, presenting the Merit Certificates to awardees of Paper Presentation 2023.

Merit

Chloe Lee and Huey Lee
The University of Hong Kong

(From left) Chloe Lee and Huey Lee

Merit

Emily Chen, Lucine Ho, Fanny Lo and Letitia Wong
The University of Hong Kong and The Chinese University of Hong Kong

(From left) Fanny Lo, Letitia Wong and Lucine Ho

Merit

Michelle Chin and Venus Tsang
The University of Hong Kong

(From left) Venus Tsang and Michelle Chin

Awardees of Audience's Favourite Team

Matthew Young FCG HKFCG(PE), Institute Qualifications Committee Vice-Chairman, presenting certificate to the awardees of Audience's Favourite Team in appreciation of their achievements.

Kelly Chan, Kelly Cheung, Sandy Ma and Karen Tam
The Chinese University of Hong Kong, The University of Hong Kong and The Hang Seng University of Hong Kong

(From left) Sandy Ma, Karen Tam, Kelly Cheung and Kelly Chan

Acknowledgment (Listed in alphabetical order of surname)

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Paper Competition Reviewers

1. Dr Dennis Chan, former Senior Lecturer, Department of Finance, CUHK Business School, The Chinese University of Hong Kong
2. Prof Steven Cheung, Lecturer, Department of Accounting, The Hong Kong University of Science and Technology
3. Dr Alice Chung, Senior Lecturer, Programme Coordinator (Corporate Governance and Risk Management), and Financial Services & Planning Concentration Coordinator, Department of Business Administration, Hong Kong Shue Yan University
4. Dr Lisa Goh, Associate Professor and Programme Director of BBA in Corporate Governance and Compliance, Department of Accountancy, The Hang Seng University of Hong Kong
5. Carmen Lam FCG HKFCG(PE), Senior Lecturer, Lee Shau Kee School of Business and Administration, Hong Kong Metropolitan University
6. Dr Bruce Li FCG HKFCG(PE), Programme Director - Master of Corporate Governance and Senior Teaching Fellow, School of Accounting and Finance, The Hong Kong Polytechnic University
7. Dr Lynn Wang, Assistant Professor, HKU Business School, The University of Hong Kong
8. Dr Raymond Wong, Associate Dean (Undergraduate Programmes), College of Business, City University of Hong Kong
9. Tommy Wong, Senior Lecturer, The Rita Tong Liu School of Business and Hospitality Management, Caritas Institute of Higher Education
10. Dr Davy Wu, Senior Lecturer, Department of Accountancy and Law; Programme Director, MSc in Corporate Governance and Compliance; and Associate Director (Corporate Governance), CCGFP, Hong Kong Baptist University
11. Prof Harry Wu, Associate Professor, Department of Accountancy, Lingnan University

Paper Competition Panel Judges

1. Ricky Cheng, Director and Head of Risk Advisory, BDO Risk Advisory Services Limited
2. Donald Lai ACG HKACG, Senior Legal Counsel, CCB International (Holdings) Limited
3. Tommy Tong FCG HKFCG, Partner, Herbert Smith Freehills

Presentation Panel Judges

1. Alson Law FCG HKFCG, Institute Company Secretaries Panel member
2. Ellie Pang FCG HKFCG(PE), Institute Chief Executive
3. Matthew Young FCG HKFCG(PE), Institute Qualifications Committee Vice-Chairman

Auditor for the Audience's Favourite Team Award

Edmund Wong FCG HKFCG, Legislative Councillor (HKSAR) and Practising Director, Patrick Wong CPA Limited

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(Incorporated in Hong Kong with limited liability by guarantee)

Hong Kong Office
3/F, Hong Kong Diamond Exchange Building, 8 Duddell Street, Central, Hong Kong
Tel: (852) 2881 6177 Fax: (852) 2881 5050
Email : ask@hkcgi.org.hk Website: www.hkcgi.org.hk

Beijing Representative Office
Room 1220, Jinyu Tower, No. 129, Xuanwumen West Street, Xicheng District,
Beijing, 100031, P.R.C
Tel: (86 10) 6641 9368/6641 9190
Email : bro@hkcgi.org.hk Website: www.hkcgi.org.cn