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Climate Change and CSR: Awareness, responsibility, and active consumers and investors

Sumit Agarwal and Bernard Yeung (Oct 2021)[1]

More frequent extreme weather events linked to global warming, such as colossal forest fires, massive tropical storms, and devastating floods, have led to substantial human and economic losses. These episodes have been the subject of growing concern, contributing to a broad global consensus on the need to combat climate change. For example, the landmark Paris Agreement aims to achieve a climate-neutral level of greenhouse gas emissions by the middle of this century. Climate change was also one of the key themes of the G-7 summit in June this year, where the participating countries committed to limiting the rise of projected global temperatures to 1.5 C. In its final public statement, the summit reaffirmed the collective goal of G-7 economies to jointly mobilise US$100 billion a year from public and private sources through 2025 to combat climate change.

Sustainability has long been a primary concern in Singapore. The government has raised state-wide awareness of climate change and solicited public and private investment geared towards sustainability goals. For example, the Monetary Authority of Singapore (MAS) is steering the financial sector towards a strong sustainability focus and has embarked on a suite of sustainability-related initiatives. These are outlined in MAS' first sustainability report, released in June 2021, which included plans to provide US$1.8 billion of Singapore's official foreign reserves to five asset managers for climate-related investments under the Green Investment Programme.

Serious research on Corporate Social Responsibility (CSR) research ought to be connected with fundamental economic principles and lead to meaningful policy questions.[2] This digest collates three attention-worthy CSR-related research papers presented in the 2021 ABFER Main Conference and ties them to relevant fundamental economic principles and policy questions.[3] Accordingly, we sort them into three investigation angles.

The first angle investigates the behavioural tendencies of human decision-making. A recent experience raises people's weight on the significance of the experience, a phenomenon called the recency effect. One negative implication of the recency effect is that people could over-react to the most recent experiences. On the other hand, this could mean that reminders serve a useful purpose. A research paper presented at the May 2021 ABFER conference shows that recent experiences with scorching weather raise mortgage-loan officers' assessment of a property's exposure to climate-related environmental risks. Policymakers and

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[2] Committed to promoting relevant research, ABFER and NUS's Sustainable and green finance Institute will collaborate to encourage strong Asia's research in CSR. We shall host a special CSR session at the ABFER May conference. The session will feature rigorous CSR research papers which inform policymakers, practitioners and stimulate high-quality research.

[3] The papers are presented on May 24, 2021 (Corporate Fin.) and May 26, 2021 (Real Estate and Urban Econ.)

- "Climate Change Concerns and Mortgage Lending," by *Frank Weikai Li (Lee Kong Chian School of Business, Singapore Management University) and Tinghua Duan (IESEG School of Management).*
- "Regulation-Induced CSR," *Vidhi Chhaochharia (University of Miami), Rik Sen (University of New South Wales) and Jing Xu (University of Technology Sydney)*
- "Outsourcing Climate Change," *Rui Dai (University of Pennsylvania), Rui Duan (York University), Hao Liang (Singapore Management University) and Lilian Ng (York University)*

practitioners should incorporate the recency effect on decision-making in planning and sort out the differences between the over-reaction and the reminder channels.

The second angle leverages the possibility that people intrinsically care about CSR issues. The first fundamental theorem in welfare economics says that a competitive equilibrium has a Pareto efficient allocation of resources (Arrow 1951, Debreu 1951). This result has sometimes been cited to make the argument that that firms should focus on profit-maximisation and advocate against policy intervention. However, the presence of externalities may affect the validity of the result.[4] Furthermore, people do care! A paper presented at the ABFER May 2021 conference shows that a toothless Indian government requirement asking firms to donate 2% of their profits to CSR activities works like magic – firms do donate, leading to positive CSR results. There could be rational economic explanations for the observation. Still, there could be inexpensive policies to draw people's attention to CSR deeds resulting in positive efforts towards public goods.

The third angle is related to the Coase Theorem on externalities (Coase 1960). The theorem states that even with externalities, a competitive equilibrium with well-defined property rights and low transaction costs is socially optimal. The trouble lies in implementation. Unscrupulous profit-maximising firms will off-load their polluting actions to arms-length suppliers. In some countries with lax environmental protection regulations, arms-length suppliers will sacrifice the environment to save production costs and attract buyers' contracts. A paper presented at the ABFER May 2021 Conference shows that firms indeed off-load their environmental responsibility towards such arms-length suppliers. However, consumer and investor awareness could play a positive role in mitigating such off-loading. While mindful of the monitoring role of environmentally conscious consumers and investors in limiting pollution, further thinking cautions against over-advocating for consumer and investor activism. A clear definition of property rights and reliable information discovery is crucial for the Coase Theorem to apply.

Recency Effect and Financial Decisions

Recent increases in the frequency of dramatic natural disasters – forest fires, extreme temperatures, record-breaking rainfalls and snowfalls, and floods – may be linked to global warming. These events damage properties and their value. However, even the most scientific approaches do not yield widely accepted estimates of changes in the probability distributions of extreme weather events. Upward revisions of these probabilities could be a matter of judgment and belief. On the other hand, relying just on past data could lead to under-assessments of heightened environmental risks.

The presented paper by Li and Duan (2021) shows that awareness of recent weather events indeed affects economic decisions. The authors examine loan officers' mortgage lending decisions. They find that, in the U.S., on an abnormally hot day, loan officers curtail mortgage lending in counties susceptible to the damage of rising sea levels. The research further reveals that fintech lenders can fill the mortgage demand gap. These lenders use historical information and data algorithms to predict the future.

An interpretation of these results is that a recent extraordinary experience of scorching weather intensifies the perception of climate change. This results in heightened awareness of the possible damage of climate change and thus affects these loan officers' economic decisions. However, fintech lenders make decisions based on past data, which often do not include information suggesting possible regime changes, including climate change. Accordingly, fintech leaders' decisions do not reflect the climate change concern.

Who is right? Should lenders adjust or not adjust their future expectations? Excessive sensitivity to climate change may limit the homeownership of people who are willing to bear the exposure to property damage due to climate changes. However, insufficient awareness of possible climate changes can lead to excessive exposure to environmental risks. Perhaps the co-existence of fintech lenders and non-fintech lenders allows for a sorted hedonic outcome. Overall, would this be the optimal arrangement for incorporating climate change in our financial decisions?

[4] Among other conditions required for the theorem to hold are assumptions of complete market and information.

This paper's result begs policy questions. Is there a need to stipulate disclosure of one's assessment of possible climate change in making a financial investment arrangement? Or, have human experiences automatically raised our awareness of potential climate changes?

Policy Soliciting Corporate CSR Efforts

Like the previous research paper, the Chhaochharia and Xu (2021) study examines practitioners' decision-making regarding CSR. Their work focuses on how companies react to a request to spend firm profits on CSR activities. The first fundamental theorem in welfare economics says that a competitive equilibrium attains a Pareto efficient allocation of resources, absent externalities and complete market and information. The failure of these conditions may justify policy interventions. However, the studied policy intervention is unenforced and yet is effective.

The Indian government legislated the Companies Act in 2013, which requires firms to spend 2% of their profits on CSR activities. The regulation clearly defined the allowed CSR activities: promotion of education, health provision, poverty reduction, environmental sustainability, and gender equality. The largest category of aggregate CSR spending from donations stemming from the Act is in education, which receives around 28% of the total contributions. The authors examine the real impact of CSR expenditure of firms on the education sector by utilising a large-scale annual government survey of schools in India. The data allows them to examine the outcome of corporate philanthropic spending.

The authors find that the corporate CSR expenditure is associated with statistically and economically significant increases in the number of schools, enrollment, and teachers. Specifically, INR 1 million (equivalent to USD 15,000 approximately) of additional spending in a district leads to 49 additional students enrolled, 0.125 additional primary schools, and 2.1 additional teachers. There are also improvements in school facilities, e.g., drinking water, toilets, computers, and books. Furthermore, the donations are not correlated with district economic growth and are geared towards private schools rather than public schools. Thus, the donations are unlikely to be related to economic growth in school districts or payments to district governments for favors.

The peculiarity of the action is that non-complying firms could avoid giving out donations by explaining their reasons for non-compliance with no materials consequences, as there is a total absence of instances of firms being punished during the sample period. Moreover, the law did not define what comprised a reasonable explanation of non-compliance.

Thus, the toothless 2013 Companies Act prompted corporate philanthropic spending with the aforementioned real effect. Companies do not resort to finding an excuse to avoid making an affordable and socially responsible expenditure. There could be sound economic explanations for this apparent "non-profit-maximising" behaviour. Firms may be wary of a hidden consequence of non-compliance even if the Act does not impose an immediate penalty, or firms may be worried about losing regulators' favour. If they must spend on CSR, they may as well spend the money effectively. Then, firm owners may genuinely have an altruistic desire; a little comply-or-explain policy successfully nudges them to participate in CSR activities, even in a country not known to have strong policy enforcement.

Off-Loading Environmental Responsibilities and Consumer and Investor Activism

The well-known Coase theorem says that societies can attain Pareto optimal arrangement in dealing with externalities if property rights are well defined and transaction cost is low. The devil is in the details. The work by Duan, Liang, and Ng (2021) illustrates the usefulness of having consumers and investors taking up the monitoring role to enforce property rights. Yet, there is a need to exercise caution in advocating for consumer and investor activism.

Companies, especially multinationals, may off-load their environmental responsibilities to their suppliers based elsewhere in lax jurisdictions. These suppliers can reduce their production costs and thus attract purchase orders because they do not have to pay to manage the externalities of their carbon emissions. Companies can bypass their environmental responsibilities, perhaps, because this type of off-loading is costly to monitor. Or, perhaps, they are outright not legally responsible for their suppliers' behaviour. The list of explanations could be long.

CO2 emissions are divided into three categories, or scopes. Scope 1 entails direct emissions via self-production; scope 2 includes emissions via direct energy consumption; and scope 3 covers emissions by suppliers. Firms often commit to reducing scope 1 and 2 emissions but not scope 3 emissions. Scope 3 emissions via foreign suppliers are remarkably hard to monitor. Duan, Liang and Ng (2021) show empirical evidence that some U.S. companies off-load their environmental responsibilities.

Specifically, U.S. firms with more scope 1 emissions also have more scope 3 emissions due to the nature of their industries. However, U.S. firms that import supplies have a reduced correlation between scope 1 and scope 3 emissions; this implies substitution between home emissions and off-load emissions overseas. Furthermore, when U.S. firms have to reduce scope 1 emissions due to regulatory shocks, their imports further enhance the substitution between scope 1 and scope 3 emissions. Interestingly, the substitution is more extensive for firms in which environmental reputation is regarded as more important to management and board members. However, firms off-load pollution less if their customers are more environmentally conscious – including government buyers or simple arms-length customers. Also, firms with more environmentally conscious block shareholders will do the same.

The paper's firm-level evidence illustrates the potential persuasive power of consumers and investors in nudging firms to be environmentally conscious. The mechanisms for this result may derive from a number of possible processes. Perhaps consumers and investors objecting to pollution are willing to make an effort to monitor the behaviour of the companies and their suppliers. They are also more willing to use their consumption and investment stake to mitigate their companies from off-loading pollution. Or, there is some self-selection where environmentally conscious consumers and investors are more likely to be associated with environmentally conscious companies.

The paper shows that consumer and investor activism may have real economic effects. But we should urge caution. What constitutes unacceptable off-loading? What is the unintended economic consequence? Outsourcing is an integral part of globalised supply chains in modern manufacturing. Lack of clarity in enforcing consumer and investor activism against outsourcing could lead to overzealous and counter-productive effects.

Another key ingredient is information validity. We should note that there could be schemes where competitors sabotage the reputation of clean suppliers to induce unfair activism. There could be politically motivated moves to spread rumours on competing supplying countries' environmental records or, even worse, human rights records.

Conclusions

The body of research presented at the ABFER workshop fruitfully strengthens our intuitive understanding of human behaviour towards CSR and related policy issues.

Firstly, behavioural biases affect human decision-making. One of these biases is the recency effect. The Li and Duan (2021) results show that while people might care for the environment, reminders can help them to be cognisant of the significance of rare events. There could be other behavioural biases that warrant attention in managing collective behaviour aimed towards protecting our environment.

Secondly, notwithstanding the result of the first fundamental theorem of welfare economics (also known as the "Invisible Hand Theorem"), that any competitive equilibrium leads to a Pareto efficient allocation of resources, profit-maximising actions may not necessarily lead to Pareto efficiency because of externalities. Furthermore, firm owners do want to care about public goods. The presented Chhaochharia and Xu (2021) results suggest that a non-enforced policy nudging companies to participate in CSR leads to effective corporate spending on CSR.

Finally, while the well-known Coase theorem says that societies can attain Pareto optimal arrangement in dealing with externalities if property rights are well defined and transaction costs are low, practical application can be challenging. Even in a country where corporate environmental responsibility is reasonably spelt out and monitored, the presented Dai, Duan, Liang and Ng (2021) results showcases the possibility of off-loading the burden of managing pollution externalities by outsourcing from foreign

suppliers. Consumer and investor activism may mitigate such behaviour, but may lead to unpleasant unintended consequences. The challenge is to have a clear definition of property rights and well validated information about foreign suppliers.

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