Doctoral Research Project Summary

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An important aspect of good governance is strategic risk oversight. More recently environmental, social and governance (ESG) issues have become a major topic in these conversations. My research focuses on the pricing and response to emerging business risks from climate change. A better understanding of the threats and opportunities with respect to climate change is needed for boards to effectively prioritize and manage these risks.

Climate change risks are increasingly viewed as significant; investors rank climate and environmental risks at a 5th and 6th order of importance in risk management (Krueger et al., 2020). Central banks, including the Bank of Canada, have also identified climate change as a vulnerability to the financial system (Bank of Canada, 2019). Further, climate risk is an understudied area in financial economics (Hong et al., 2019). For my research, I will study both hurricane risk in household mortgage lending and how investors respond to increased climate litigation risk. I discuss the household mortgage lending project below:

Climate change is expected to increase the frequency and severity of hurricanes (Geophysical Fluid Dynamics Laboratory, 2021). More frequent and intense hurricanes may increase the probability of households missing mortgage payments due to lost income from economic disruptions or property destruction. Further, areas that are at greater risk to the effects of climate change, such as sea-level rise, have seen house prices decrease to take this into account (Ortega and Taspinar, 2018). Since houses are often provided as collateral for mortgages, a decrease in the value of houses can affect the amount banks can recover in the event of a mortgage default.

I study whether banks are factoring increasing hurricane risk into their mortgage lending decisions. Specifically, I will identify which factors explain different risk management practices among banks. Capital structure may be an important factor that incentivizes a firm's climate change risk management. One common concern in finance theory is that as companies take on more debt, they may not invest in projects that optimize firm value. For example, if a company has a lot of debt, they may take on riskier projects since equity holders would be entitled to the upside if the project goes well, but have limited liability to the downside. In my context, if banks have a lot of debt, they could be incentivized to engage in risky strategies, such as concentrating lending in hurricane areas. I seek to understand which banks are managing hurricane risk and whether the differences can be explained by organizational incentive problems that are preventing banks from internalizing the cost and managing this risk accordingly.

These results contribute to a broader research area that studies the link between governance and ESG practices. More recent studies have found proactive environmental and social policies increase the profitability of firms (Flammer, 2015), so boards have a financial incentive to monitor ESG practices. Further, research has found board structure can influence ESG management; firms with more institutional ownership are more likely to improve environmental and social performance (Dyck et al., 2019). Large institutional investors are also more likely to be concerned about climate risk and engage with firms to implement practices that manage it (Krueger et al., 2020). I contribute to this literature by studying whether a firm's capital structure creates different incentives for firms to manage their exposure to climate change. In this paper I plan on answering whether the amount of debt a bank has affects their incentives to manage portfolio risk from hurricanes. If there is a link between capital structure and risk management, then when boards engage in strategic risk oversight, they should discuss both which emerging risks need to be managed and also whether the capital structure properly incentives firms to manage these risks.

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