“Macroeconomic Impact of Climate Change on Sovereign Risk in Asia”

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Main comments

• Paper provides a very comprehensive econometric analysis to an important policy issue.

• The contribution should be better clarified and developed further.

• Further insights needed on the transmission channels of climate change vulnerability to sovereign risk.

• **Threshold effects** and non-linearities should be explored.

• Paper relies on a single measure of climate change vulnerability, the ND-Gain Index

• Paper should aim to disentangle physical and transition climate risks.
Main comments (contd.)

• Long sample period since 1980 would allow testing for time-varying effects.
• More focus on the key coefficients of interest.
• Suggest to examine fiscal risks for economies highly exposed to climate risks.
• Paper can provide a deeper assessment of the policy implications.
Recent research on the relationship between climate vulnerability, sovereign credit profiles, and the cost of capital in climate-vulnerable developing countries has shown that these countries incur a risk premium on their sovereign debt, reducing their fiscal capacity for investments in climate adaptation and resilience (Buhr et al. 2018; Kling et al. 2018). This raises serious questions regarding the possible impacts of climate risk on the sustainability of public finances for climate-vulnerable countries, the fiscal health of which is also under threat from potential output losses related to climate hazards and disaster recovery costs as well as transition risks that may hit specific sectors or the economy at large.

To assess and mitigate climate-related sovereign risk properly, it is important to understand the ways in which climate change can amplify sovereign risk. In the following, we identify and analyze different transmission channels, which Figure 4 displays. We first discuss the importance of natural capital and natural services as the very foundation of economic well-being (3.1) before turning to the different risk channels that could worsen a sovereign's standing: the fiscal impacts of climate-related disasters (3.2); the fiscal consequences of adaptation and mitigation policies (3.3); the macroeconomic impacts of climate change (3.4); climate-related risks and financial sector stability (3.5); the impacts of climate change on international trade and capital flows (3.6); and the impacts of climate change on political stability (3.7).

Motivate the econometric analysis

Uncover long-run and short-run dynamics for climate-vulnerable economies

**Climate Risk Coefficients from Panel Regression**

![Chart showing climate risk coefficients for different regions.]

**Impulse Responses for High Risk Economies**

- Response of bond yields to climate vulnerability shock
- Response of bond yields to climate resilience shock