

Climate Change and Sovereign Risk

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Executive Summary



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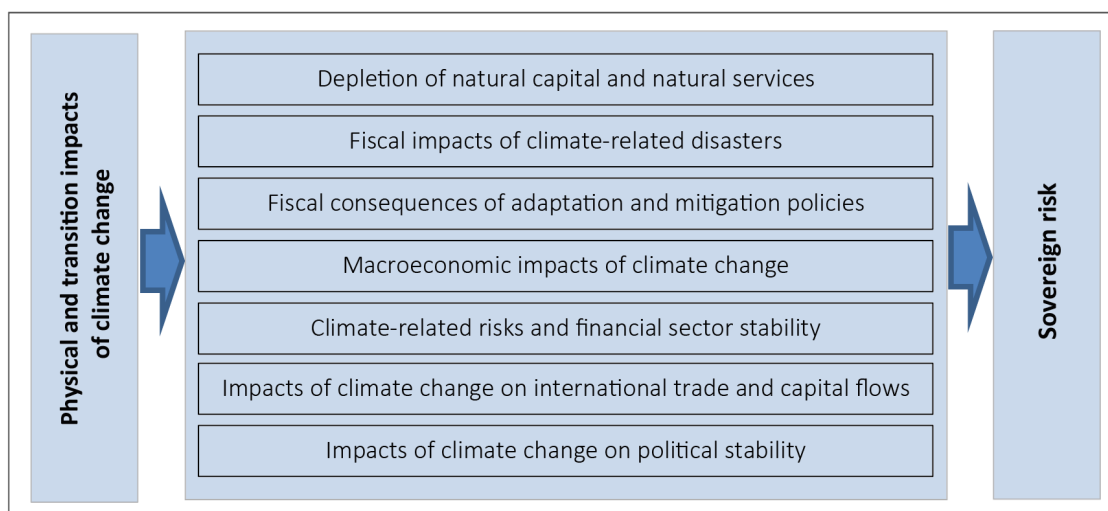
Climate change can have a material impact on sovereign risk through direct and indirect effects on public finances. It raises the cost of capital of climate-vulnerable countries and threatens debt sustainability. Governments must climate-proof their economies and public finances or potentially face an ever-worsening spiral of climate vulnerability and unsustainable debt burdens.

This study focuses on the complex nexus between climate change and sovereign risk, identifying and scrutinizing six transmission channels through which climate change can amplify sovereign risk and worsen a sovereign's standing:

1. Fiscal impacts of climate-related natural disasters
2. Fiscal consequences of adaptation and mitigation policies
3. Macroeconomic impacts of climate change
4. Climate-related risks and financial sector stability
5. Impacts on international trade and capital flows
6. Impacts on political stability

The transmission channels are not independent of each other. Climate impacts can magnify the transmission of risk through multiple channels. The socioeconomic and fiscal effects of climate change are multifaceted and depend on the policies taken or not taken to mitigate and adapt to these risks.

Transmission channels of risk



Southeast Asian countries face considerable climate-related macrofinancial stability and sovereign risk

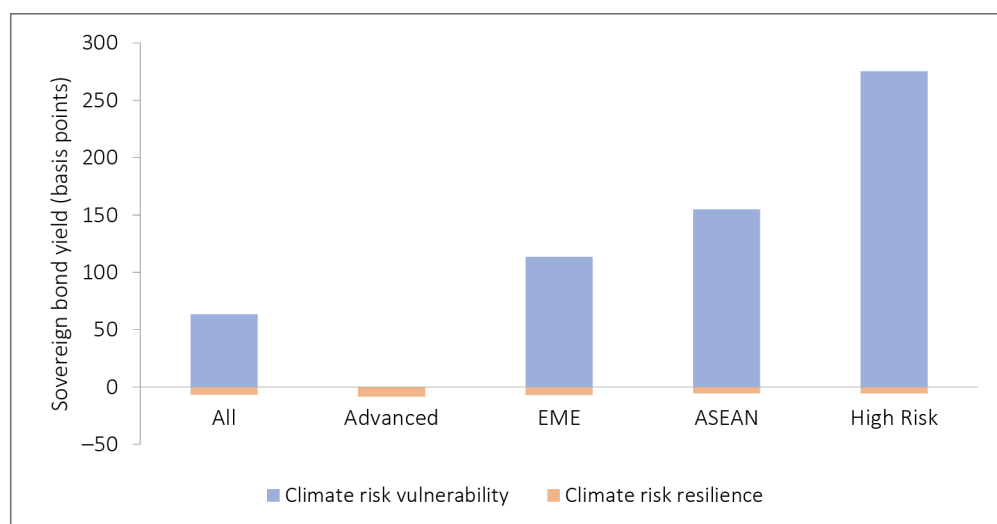
This report illustrates the relevance of the six transmission channels for sovereign risk in Southeast Asia, one of the most climate-vulnerable regions of the world. Physical risks are expected to significantly impact economic activity, international commerce, employment, and public finances with national and regional implications. Transition risks will be prominent as exports and economies become affected by international climate policies, technological change, and changing consumption

patterns. The implications of climate change for macrofinancial stability and sovereign risk are likely to be material for most if not all countries in Southeast Asia.

The report presents new empirical evidence on the relationship between climate vulnerability, resilience, and the sovereign cost of capital. Using a sample of 40 developed and emerging economies, econometric analysis shows that climate risks and resilience to these risks have significant effects on the cost of sovereign borrowing.

Higher climate risk vulnerability leads to significant rises in the cost of sovereign borrowing. Premia on sovereign bond yields amount to around 275 basis points for economies highly exposed to climate risk, compared to 155 basis points for the Association of Southeast Asian Nations and 113 basis points for emerging market economies overall. In contrast, exposure to climate risks is not statistically significant for the group of advanced economies. We also find resilience to climate risk to be statistically significant in reducing bond yields across all country groups, but with smaller magnitudes.

**The impact of climate risk vulnerability and climate risk resilience
on the cost of sovereign borrowing**



ASEAN = Association of Southeast Asian Nations, EME = emerging economies.

Note: The y-axis refers to the climate risk coefficients from the estimation of the panel model on sovereign bond yields, expressed in basis points.

Source: Compiled by the authors.

Overall, the analysis confirms that climate vulnerability has significant implications for sovereign borrowing costs, and that the magnitude of the effect is much larger for countries highly vulnerable to climate change. Impulse response analysis suggests that shocks imposed on climate vulnerability and resilience have permanent effects on bond yields, and that economies highly exposed to climate risks experience larger permanent effects on yields than economies with lower exposure.

Concerted efforts are needed to mitigate and manage climate-related sovereign risks

All branches of government will have to address climate-related risks. Monetary and financial authorities will have to play crucial roles in analyzing and mitigating macrofinancial risks. We recommend five broad policy actions to mitigate and manage climate-related sovereign risk in a coordinated manner.

First, governments need to conduct comprehensive sectoral and national vulnerability assessments over multiple timespans to identify climate-related sovereign risk and develop national adaptation plans. Systematic, scenario-based assessment of all sources of vulnerability for the macroeconomy, the financial system, and public finances is needed, addressing both physical and transition risks. Such an assessment could be conducted by a dedicated national climate risk board that should include the central bank and supervisor along with the key government departments responsible for finance, economy, planning, and agriculture, among others.

Second, based on vulnerability assessments, financial authorities need to mainstream climate risk analysis into public financial management. This should include appropriate disclosure, analysis, and management of climate risks to public finances. Budgetary processes need to account for climate risk and mainstream climate-relevant policies and laws. Furthermore, finance ministries need to enhance public sector funding and debt management strategies, including through debt instruments with risk-sharing features and diversification of government revenue streams away from high-risk sectors.

Third, central banks and financial supervisors need to address climate-related risks in their monetary and prudential frameworks and operations. Disclosure of climate and other sustainability risks should become mandatory, and climate stress tests of financial institutions should be conducted regularly. Climate-related financial risks should be mainstreamed into macro and micro prudential supervision. Monetary and prudential measures should be aligned with climate goals. Importantly, supervisors should reconsider the prudential treatment of sovereign exposures in financial regulation.

Fourth, governments and financial authorities should implement financial sector policies to scale-up investment in climate adaptation and develop insurance solutions. Monetary and financial authorities can play an important role in supporting the development of local currency bond markets and fintech solutions for mobilizing domestic savings for financing climate-resilient, sustainable infrastructure and other adaptation measures. Developing insurance markets and broadening insurance coverage can help to enhance the financial resilience of households and businesses and take the burden off public finances.

Fifth, international financial institutions—including the International Monetary Fund, multilateral development banks, and regional financing arrangements—have a special role in supporting vulnerable countries to better address climate-related sovereign risks and strengthen adaptive capacity and macrofinancial resilience. Building on their respective strengths, they can provide technical assistance and training, support surveillance and risk monitoring, provide finance for adaptation and resilience investment, help develop insurance solutions, and provide emergency lending and crisis support.

About the report

This report was prepared by a team of researchers at the Centre for Sustainable Finance at SOAS, University of London; the Asian Development Bank Institute; the World Wide Fund for Nature Singapore; and Four Twenty Seven.

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