Institution: SOAS University of London

Unit of Assessment: 17 – Business and Management Studies

Title of case study: Managing Climate Risk and the Cost of Capital in Climate-Vulnerable Countries

Period when the underpinning research was undertaken: 2017-2019

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Prof Gerhard Kling	Professor of International Business and Management	2013 – August 2019
Prof Victor Murinde	AXA Professor in Global Finance	2017 – Present
Dr Ulrich Volz	Reader in Economics	2012 – Present

Period when the claimed impact occurred: 2018 – 31 December 2020

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact (indicative maximum 100 words)

Research conducted at SOAS is the first systematic analysis of the link between climate vulnerability and the cost of capital in developing countries. Based on this research, the Ministers of Finance of the Vulnerable Twenty Group of climate-vulnerable developing countries (V20) planned and launched new financial instruments in collaboration with international partners to address this problem. The V20 Ministers of Finance agreed with the International Monetary Fund to work on a V20-IMF Joint Action Agenda and invited SOAS to write a background paper. The research also had impact on various international financial institutions including the World Bank, where it contributed to the development of a "Sovereign ESG Data Portal" to encourage and facilitate further analysis and improved data quality in this field.

2. Underpinning research (indicative maximum 500 words)

Climate-vulnerable developing countries are most exposed to the physical impacts of climate change, including an increase in the frequency and intensity of extreme weather events such as storms, droughts, floods, and heat waves, as well as chronic impacts, such as worsening water stress or a sea-level rise. These countries also tend to lack the financial resources to mitigate risks and adapt to climate change by investing in climate-resilient infrastructure and other resilience-enhancing measures.

Research conducted at SOAS between 2017 and 2019 represents the first systematic analysis of the relationship between climate vulnerability and the cost of capital in developing countries. The initial research **[3.1]** was conducted in 2017-2018 by an interdisciplinary team comprising Prof Gerhard Kling (Professor of International Business and Management at SOAS until August 2019), Prof Victor Murinde (AXA Professor in Global Finance) and Dr Ulrich Volz (Reader in Economics) together with Yuen Lo (MSc student and RA in 2018). A report based on this research was launched in London **[3.2]** by SOAS, Imperial College and the United Nations Environment Programme (UNEP). To investigate the impact of climate vulnerability on sovereign bond yields, the research by SOAS applied econometric analysis using measures of climate vulnerability and social preparedness for the impacts of climate change along with a series of macroeconomic control variables. The sample analysed comprised 46 countries, including 25 members of the V20 group of climate vulnerable countries, over the period 1996-2016. The research found that the incremental debt cost due to higher climate vulnerability, for the V20 countries, exceeded USD 62 billion over this period. The research also found that a lack of social readiness, which includes education and infrastructure, has a negative and significant

effect on bond yields, implying that social and physical investments can mitigate climate risk-related debt costs and help to stabilise the cost of debt for vulnerable countries. The research hence recommended greater investment in climate resilience in vulnerable countries. It also highlighted ways in which international cooperative efforts to measure, monitor, and transfer climate risks will provide an opportunity to prevent a deterioration of sovereign borrowing capacity in affected countries. Bob Buhr, Charles Donovan and Natalie Pullin from Imperial College contributed the country case studies to this report. The framing was developed jointly by SOAS and Imperial College.

Follow-up research conducted in 2019 by Kling, Volz, Murinde and Sibel Ayas (Visiting Researcher at SOAS in 2019) showed that the cost of capital problem also extends to businesses in vulnerable developing countries **[3.3]**. In particular, it investigated the effect of climate-related risks on firms' cost of capital and access to finance both theoretically and empirically. First, the paper developed a theoretical model that shows how climate vulnerability could affect firms' cost of capital and access to finance. Second, the paper examined this issue econometrically, using panel data of 15,265 firms in 71 countries over the period 1999-2017. The research showed that on average the cost of corporate debt in high-risk countries is 0.68 percentage points higher than in low-risk countries because of climate vulnerability. The research hence highlighted the urgency of scaling up investments in adaptation that can mitigate vulnerability risks and demonstrated that climate-vulnerable developing economies need international support through innovative risk transfer mechanisms that would facilitate private and public investments.

This has led to further policy-oriented research, externally funded by the International Network for Sustainable Financial Policy Insights, Research, and Exchange (INSPIRE) (2019-2020, USD 30,000, GBP21,768) **[3.4, 3.5]** by Volz and Jeanne Stampe (Senior Fellow at the SOAS Centre for Sustainable Finance) co-authored by interlocutors at the Asian Development Bank Institute (John Beirne, Nuobu Renzhi), risk data firm Four Twenty Seven (Natalie Ambrosio Preudhomme, Emilie Mazzacurati) and WWF Singapore (Adrian Fenton) to further develop the understanding of the macrofinancial impacts of climate change on vulnerable countries, and develop policy recommendations. It also led to commissioned research jointly undertaken with the V20 Secretariat (Sara James Ahmed) to develop proposals for how the IMF can support V20 countries **[3.6]**.

3. References to the research (indicative maximum of six references)

3.1. Kling, Gerhard, Yuen Lo, Victor Murinde, and Ulrich Volz (2018), "Climate Vulnerability and the Cost of Debt", *Centre for Global Finance Working Paper* No.12, London: SOAS University of London. https://doi.org/10.2139/ssrn.3198093 **14 citations on Google Scholar as of 31 Dec 2020, excluding self-citations**

3.2. Buhr, Bob, Ulrich Volz, Charles Donovan, Gerhard Kling, Yuen Lo, Victor Murinde, and Natalie Pullin (2018), *Climate Change and the Cost of Capital in Developing Countries*, London and Geneva: Imperial College London; SOAS University of London; UN Environment. URL: http://unepinquiry.org/wp-content/uploads/2018/07/Climate_Change_and_the_Cost_of_Capital_in_Developing_Countries.pdf **Policy report cited widely as a reference for further research beyond SOAS**

3.3. Kling, Gerhard, Ulrich Volz, Victor Murinde, and Sibel Ayas (2020), "The Impact of Climate Vulnerability on Firms' Cost of Capital and Access to Finance", *World Development* 137 article no 105131. URL: https://doi.org/10.1016/j.worlddev.2020.105131 **Peer-reviewed**

3.4 Volz, Ulrich, John Beirne, Natalie Ambrosio Preudhomme, Adrian Fenton, Emilie Mazzacurati, Nuobu Renzhi, and Jeanne Stampe (2020), *Climate Change and Sovereign Risk. London*, Tokyo, Singapore; and Berkeley, CA: SOAS University of London; Asian Development Bank Institute; WWF Singapore; and 427. URL: https://doi.org/10.25501/SOAS.00033524 **Follow-up research funded by INSPIRE**

3.5 Beirne, John, Nuobu Renzhi, and Ulrich Volz (2020), "Feeling the Heat: Climate Risks and the Cost of Sovereign Borrowing", *ADBI Working Paper* No. 1160, Tokyo: Asian Development

Bank Institute. URL: https://www.adb.org/publications/feeling-heat-climate-risks-cost-sovereign-borrowing **Follow-up research funded by INSPIRE**

3.6 Volz, Ulrich, and Sara James Ahmed (2020), "*Macrofinancial Risks in Climate Vulnerable Developing Countries and the Role of the IMF. Towards a Joint V20-IMF Action Agenda*", London, Rotterdam, and Bonn: SOAS University of London, Global Center on Adaptation, and Munich Climate Insurance Initiative. URL: https://climate-insurance.org/wp-content/uploads/2020/04/Macrofinancial-Risks-in-Climate-Vulnerable-Developing-Countries-and-the-Role-of-the-IMF_Towards-a-Joint-V20-IMF-Action-Agenda.pdf **Follow-up research with and for the V20 to support the development of a V20-IMF Joint Action Agenda**

4. Details of the impact (indicative maximum 750 words)

The research led to 1) direct policy actions by the Ministers of Finance of the Vulnerable Twenty Group (V20) of 48 climate-vulnerable developing countries that are home to 1.2 billion people. It also 2) influenced the work of several international financial organisations; 3) led the UK government to commission a study on the role of climate risk transparency in preparation of COP26, and 4) led to an award of funding by a research network aiming to support central banks and supervisors in their work to manage climate risk and mobilise finance to support the transition to a sustainable economy through innovative research. 5) the research was picked up by a wide range of international media and thereby contributed to raising awareness of the problem in business, finance, civil society and public policy.

1) Influencing the V20 policy agendas and action on green financing

The initial research **[3.1, 3.2]** was commissioned by the United Nations Environment Programme (UNEP) in collaboration with the V20. The resulting policy report was launched in London on 2 July 2018. The report's findings were referred to in a Ministerial Communique after a meeting of the V20 Ministers of Finance at the Annual Meetings of the World Bank Group and IMF in October 2018. Urging states to act fast, the Communique states: "According to a July 2018 UNEP-mandated report, developed further to the V20 Ministers' focus on the development policy consequences of green financing, climate change risks could severely penalize V20 economies with 1 dollar of additional costs due to climate vulnerability for every 10 dollars paid in interest. That penalty will double within the coming decade due to rising climate risks with concrete negative consequences for our growth and development prospects." **[5.1 p1]**.

Volz was subsequently invited to present the report's findings to a meeting of the V20 Finance Ministers at the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP) in Katowice in December 2018. The V20 Finance Ministers further discussed the report's policy implications at a Ministerial Dialogue at the Spring Meetings of the World Bank Group and IMF in April 2019. The press release makes direct reference to the research findings on the cost of climate vulnerability: "In the last ten years, climate vulnerability has cost V20 countries an additional US$62 billion in interest payments alone, […] reducing countries' ability to invest in climate change mitigation and adaptation measures." **[5.2 p1]**. and announced in a press release that they would launch new financial instruments. In response to the problem identified in the research, the V20 press release announced an ambitious programme of new financial instruments, in collaboration with international partners such as the World Bank and other multilateral development banks (MDBs). Proposals include an "Accelerated Financing Mechanism (AFM) for Maximal Resilience & a 100% Renewable Energy Transition to upscale existing risk mitigation tools, guarantees and blended finance facilities" in addition to "a new menu of instruments within MDBs and other development banks for adaptation, resilience and renewable energy projects." **[5.2 p2]**. Such instruments would ensure continued global economic growth in the face of increasing threats from climate change. Work by the V20 on the AFM is still ongoing, and in 2020, the V20 Secretariat commissioned a concept update paper for the AFM, again with reference to the project's research.

The Ministerial Brief of the same meeting also refers to the cost of capital problem identified by the research: "A new financing mechanism proposed for access by V20 members facing capital challenges with adaptation and mitigation projects serving V20 goals that are inhibited by higher

relative costs of capital due to interest rates and debt maturity/tenures." **[5.3 p1]**. Moreover, the V20 Ministers agreed on Workplan Priorities including "Address high costs of capital and mismatch of loan maturities to enable more private & public climate investments" and "Follow-up work on UNEP report on climate risk implications for cost of capital (V20 Regional Consultations in 2019-20)". **[5.4]**.

To translate these workplan priorities into action, during New York Climate Week in September 2019, the V20 announced the launch of a Sustainable Insurance Facility to protect micro, small and medium-sized enterprises in vulnerable economies. In the announcement, the V20 referred again explicitly to our research findings **[5.5 p5]**. The research also contributed to a dialogue between the V20 and the IMF. In May 2020, the V20 Secretariat commissioned Volz to lead a study for the V20 to support the development of a V20-IMF Joint Action Agenda on Transition Risks and Climate-related Financial and Fiscal Stability **[3.7]**.

2) Influencing international organisations to improve climate related financial risk management
The research has influenced the work of several international financial organisations in this area. Notably, the research instigated follow-up research at the World Bank Group on how climate and environmental, social and governance (ESG) factors are incorporated into both credit rating agencies' scoring and ESG index composition. Specifically, it informed the World Bank's methodology for looking into how natural capital wealth is incorporated into sovereign bond pricing. It contributed to the development of a Sovereign ESG Data Portal launched by the World Bank in October 2019 to encourage and facilitate further analysis and improve data quality in this field **[5.6]**. It also led to work by the World Bank on a proposal for a "TCFD for Sovereigns", analogous to the Financial Stability Board's Task Force on Climate Related Disclosures (TCFD) **[5.7].** Building on the SOAS research, the Interamerican Development Bank (IDB) conducted internal analysis on the impact of climate risk on the cost of capital with a focus on Latin American and Caribbean countries. The research also led the IDB to consider how to integrate climate change into its risk analysis framework and "prompted a preliminary investigation on the IDB credit rating to its sovereign exposure in the region." **[5.8]**. The research also influenced the work of international bodies such as the Global Commission on Adaptation, where it "reinforced [an] emphasis on the urgent need to strengthen the capacities of finance ministries and central banks in mitigating and managing macro-fiscal and financial sector risks related to climate change" **[5.9]**.

3) Influencing the UK government as host of COP26
In response to the research findings, in May 2020 the UK's Department for International Development (DFID, now Foreign, Commonwealth & Development Office, FCDO) commissioned a study by Climate Finance Advisors, Benefit LLC on Understanding the Role of Climate Risk Transparency on Capital Pricing for Developing Countries **[5.10a, 5.10c]**. With this, DFID tried to obtain a better understanding of how greater transparency around climate risks may affect the cost of capital in climate vulnerable countries, the problem identified in our research. The study was also intended to help inform the UK government's policies aimed at improving the framework conditions for scaling up private financing for adaptation and mitigation in vulnerable countries, in preparation of the 26th UN Conference of the Parties (COP26) on Climate Change. DFID invited Volz to join an Expert Review Panel to advise on this study. The COP26 and its preparations were delayed by a year as a result of COVID-19 and will now take place in November 2021 **[5.10b]**. The project's research is cited in the preparatory report, which was published in November 2020 **[5.10c, pp11, 22]**.

4) Externally funded follow-up research with the Asian Development Bank Institute endorsed by ASEAN
The initial research **[3.1, 3.2, 3.3]** led to the award of peer-reviewed funding in May 2019 by the International Network for Sustainable Financial Policy Insights, Research and Exchange (INSPIRE), an independent research network hosted by the ClimateWorks Foundation and the Grantham Research Institute at the London School of Economics, established to support the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) in its work to manage climate risk and mobilise finance to support the transition to a sustainable economy

through research. The new research **[3.4, 3.5]** was conducted by Volz and research partners at the Asian Development Bank Institute, WWF Singapore, and 427 in 2019-2020. The report, which included a chapter on macrofinancial risk in the ten countries forming the Association of Southeast Asian Nations (ASEAN), and its policy recommendations were endorsed in a foreword by the Deputy Secretary General of ASEAN **[3.4]**. The report **[3.4]** was originally scheduled to be launched at the Annual Conference of the NGFS hosted by the Bank of Thailand in Bangkok in April 2020. Due to COVID-19, the conference had to be cancelled and the launch was delayed until the Annual Meetings of the IMF and World Bank in October 2020.

5) Influencing media discourse and raising public awareness
The research findings were widely reported on in the media, generating almost 60 pieces of global coverage, including by The Economist **[5.11 pp1-3]**, the Financial Times **[5.11 p4]**, Reuters **[5.11 pp5-6]**, and UN Climate Change News **[5.11 pp7-8]**. This contributed to rising awareness of the problem in business, finance, civil society and public policy, but also highlighted the potential for virtuous circles: that low cost or affordable borrowing by vulnerable countries to invest in climate adaptation will "help bring down the cost of their borrowing" **[5.11 p6]**.

5. Sources to corroborate the impact (indicative maximum of 10 references)

5.1. Ministerial Communique of the V20 Ministers of Finance at the Annual Meetings of the World Bank Group and International Monetary Fund in Nusa Dua, Bali, 14 October 2018 ("4th V20 Ministerial Communique – Bali") https://www.v-20.org/4th-v20-ministerial-communique-bali/

5.2. Press Release of the V20 Finance Ministers at the Spring Meetings of the World Bank Group and International Monetary Fund in Washington DC, 11 April 2019 ("Vulnerable countries and international partners announce collaboration to climate – proof economic growth").

5.3. Ministerial Brief of the V20 Finance Ministers at the Spring Meetings of the World Bank Group and International Monetary Fund in Washington DC, 11 April 2019.

5.4. 'Snapshot of V20 Workplan Priorities', Washington DC, 11 April 2019.

5.5. Press Release of the V20 Finance Ministers at New York Climate Week, New York City, 24 September 2019 ("Vulnerable countries to insure MSMEs amidst worsening climate disasters").

5.6. World Bank Press Release, "World Bank Launches Sovereign ESG Data Portal", 29 October 2019. https://www.worldbank.org/en/news/press-release/2019/10/29/world-bank-launches-sovereign-esg-data-portal

5.7. Letter from the World Bank Group

5.8. Letter from the Inter-American Development Bank

5.9. Letter from the Global Commission on Adaptation

5.10. Impact on UK government as host of COP26; **a**) DFID Terms of Reference – Understanding the implications of increasing transparency and disclosure of climate risks on the cost of capital to developing countries; **b**) UN Climate Change Conference (UNFCCC COP 26) - SDG Knowledge Hub: https://sdg.iisd.org/events/2020-un-climate-change-conference-unfccc-cop-26/; **c**)Climate Finance Advisors, Benefit LLC (2020), Understanding the Role of Climate Risk Transparency on Capital Pricing for Developing Countries. Findings Report, Climate Finance Advisors, Benefit LLC: Washington, DC.

5.11. Consolidated report on media coverage (2018-2019), including coverage by the Financial Times, Reuters, Forbes, The Economist, as well as UNFCC and the SDG Knowledge Hub.