



Research study on the impacts of physical and transition risks on MSME's access to finance

Data Requirements

This research seeks to quantify the economic costs of physical risks and determine whether these costs differ between larger firms and MSMEs across various sectors in EMDEs (Emerging Markets and Developing Economies). The analysis will leverage firm-level bank lending data, ideally sourced from central banks, to categorize firms by size and examine how bank lending to smaller firms, particularly MSMEs, is affected under physical risk conditions.

The methodology involves analyzing changes in the debt structure of firms in response to natural disaster occurrences, distinguishing between MSMEs and larger firms across different sectors. The study would benefit from firm-level bank lending data that includes variables such as firm size, sector of operation, and loan amounts, preferably spanning from 2000 to 2023. This data will allow for a robust analysis of how lending behaviors adjust post-disaster compared to pre-disaster periods.

In addition, it is crucial to assess the financial burdens that firms bear when confronted with natural disasters. Indicators such as Non-Performing Loan (NPL) ratios or insolvency amounts in USD could provide insights into the financial distress experienced by firms. The study will focus on regions with high physical risks, analyzing shifts in bank lending behavior following natural disasters. Furthermore, exploring supervisory data available from central banks will enhance the understanding of broader trends in financial stability and resilience within these regions.

This approach aims to provide empirical evidence on the differential impacts of physical risks on MSMEs versus larger firms, informing the development of targeted financial policies that enhance the resilience of vulnerable sectors in EMDEs.

As part of this engagement, participating members are required to provide a data set that includes key variables such as firm size, sector, location, loan details, and financial



performance indicators. This data is crucial for analyzing the impact of various risks on bank lending behavior toward MSMEs, particularly in regions that have experienced natural disasters or are undergoing green transitions.

Potential Data Variables

- General supervisory data that central banks have
- Firm size (categorization into MSMEs and larger firms would be ideal)
- Firm location
- Sector under operation
- Type of bank-lending institution
- Amount of credit/loan in USD
- Interest rates
- Tenor
- Time of lending
- Insolvency yes or no?
- Amount of insolvency in USD
- Non-performing loans in USD
- Total amount of loans in USD
- NPL-ratio
- Kind of loans taken (unsecured, secured, collateral)
- Purpose of loans taken (working capital or capital investment into growth)
- Amount of debt in USD
- Amount of equity in USD
- Debt to equity ratio
- Equity capital as percent of assets (to calculate Z score)
- Return as percent of assets (to calculate Z score)
- Standard deviation of return on assets (to calculate Z score)
- Firm ownership by gender
- GDP growth
- Years under observation: 2000-2023 (preferably)
- Regions under observation should have experienced natural disaster in the past, if we want to explore the impact of physical risks on bank lending



- Regions under observation should have experienced some kind of green transitional development, such as the implementation of climate policies supporting climate neutrality, coal-mine closures, etc., to explore the impact of transition risks on bank lending.

For more information about this joint initiative, please refer to the [Terms of Reference](#) (ToR).