

Develop our understanding of short- and medium-term economic impacts of adverse climate outcomes

Project description and objective(s)

The CBM has started to study the macroeconomic consequences of climate change as well as the policies adopted to mitigate its impact.

The understanding of the physical impacts of climate change are highly relevant to the Bank's primary mandate to help maintain price stability in the euro area. The complexity of climate change and the non-linear and highly uncertain nature of its effects call for enhanced macroeconomic analysis to limit forecast errors and better understand the structural changes climate change is creating in the economy.

The effects of climate change on the economy depend on the period under consideration. In the short term, extreme weather events could lead to the destruction of housing capital and infrastructure leading to short-lived disruptions in supply and short-lived inflation spikes. In the medium-to-long run however, climate change can lead to more persistent reductions in output and upward pressures on inflation. Trends in temperature and rainfall for instance, can have devastating effects on agricultural output, while regions may become too hot for summer tourism.

In this light, the CBM is planning to start looking at the empirical links between climate change and macroeconomic outcomes. The approaches utilized are planned to be in line with Kotz (2023) and Ciccarelli et al (2023).

Main tasks

The selected candidate will be responsible for:

- Setting up empirical model(s) to estimate the effects of climate change on Maltese macroeconomic outcomes, focusing on aggregate output and inflation.
- Provide, data permitting, results disaggregated by broad NACE or HICP sectors.
- The model developed should be able to capture some non-linearities, especially seasonal ones as in Ciccarelli et al (2023).
- Develop a model able to produce results under different climate scenarios as in Kotz et al (2023).

Project-specific requirements

Candidates applying for this project are expected to be familiar with literature on the physical costs of climate change. Preference shall be given to candidates that have already developed similar studies or models.

References

Kotz, M., Kuik, F., Lis, E. and Nickel, C., "The impact of global warming on inflation: averages, seasonality and extremes", Working Paper Series, No 2821, ECB, May 2023.

Ciccarelli, M., Kuik, F. and Martínez Hernández, C., "The asymmetric effects of weather shocks on euro area inflation", Working Paper Series, No 2798, ECB, March 2023.

Contact details for questions

E-mail address: phdinternship@centralbankmalta.org