

# Escaping Damocles' Sword: Endogenous Climate Shocks in a Growing Economy

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## Abstract

We simultaneously determine in closed form the optimal climate policy and growth rate of an economy where climate disasters are recurring, large, and uncertain, with damages endogenously driven by the stock of greenhouse gases. Endogenous hazard and tipping points are also considered. Abatement and saving propensities lose important links to climatic characteristics when log utility is imposed. Assuming a non-unitary relative risk aversion reveals important interdependencies and alters policy conclusions significantly. Abatement expenditure may represent 0.7% of output, \$52/tC, with relatively mild shocks but jumps to a striking 13.8% in a pessimistic scenario involving severe shocks and tipping points.

JEL Classification: O10, Q52, Q54

**Key Words:** Climate policy, uncertainty, natural disasters, endogenous growth.

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