

# Understanding the Global Metabolism of Risk.

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## **Abstract.**

We live in a hyper connected world. Multiple phenomena are of immediate consequence across regions and economic sectors. Information flows allows instant reactions to snowballing change. This creates an unprecedented degree of complexity and interdependency, for which there are no redundancy mechanisms. What does mean for understanding and modeling complex risks? What are the implications for resilience and adaptation across global scales? After an introduction of clear examples linked to finance and aviation, two global change related examples will be explored, for adaptation to climate change and for global shocks in food systems. First, only 10 years ago the insurance world was dismissing climate change, now the insurance sector is fully aware of the issues, and coverage prices have been increasing in areas facing increasing risks. How can we understand the interplay of these limitations to handle risks? What could be done to improve the contribution to societal resilience? We explore these questions with innovative approaches based on complexity economics, showing that different market structures allow to handle different levels of risk, and that these ideas are applicable at the national and global scales. Second, some of the conditions leading to the world food crisis of 2007 are in the global landscape again, we discuss new techniques to better understand the situation and its drivers. In all these examples, the global metabolism of risk emerges as a concept to frame, explore, model and understand the linkages and dynamics leading to globally hyper connected risks across scales and economic sectors. The global metabolism of risk provides a new lens to risks that are yet to be realized or manifested, as hyper connected scales and sectors continue building new links.