

## Chapter

# Economics of the Risk Cost of Carbon

### *Abstract*

The standard market-based approach for addressing climate change is to internalize the Social Cost of Carbon (SCC) into the economy with carbon taxes. This standard approach is failing to respond to the growing biophysical and financial risks of climate change—called the ‘climate systemic risk’. In this chapter we clarify a market hypothesis—called the Holistic Market Hypothesis (HMH)—that points to the existence of a second (missing) external cost that quantifies the climate systemic risk—called the Risk Cost of Carbon (RCC).

The RCC is the cost of implementing risk tolerances, and it may be described as the premium of a preventative insurance policy. The RCC is technically defined as the cost of limiting the probability that certain levels of global warming will be exceeded within a rolling 100-year planning horizon. The hypothesis put forward is that a policy that can plausibly internalize the RCC into the economy is a ‘global carbon reward’ with protocols for assessing the RCC, and rules for incentivizing climate mitigation and socio-ecological co-benefits. The global reward is a parallel currency, and central banks are required to act as guarantors of the currency by pegging the currency’s price to the RCC.

The HMH is founded on a network model for climate policies and an epistemology of complementary relationships. Key findings are that the SCC and RCC are observed with neoclassical and biophysical worldviews, respectively, and key inferences are that complementary pricing can resolve paradoxes related to time discounting, Jevons effect and unsustainable GDP growth. The RCC and the global carbon reward have relevance to the Paris Agreement (COP21), and a key recommendation is to develop the risk management approach under central bank mandates.

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TRANSrisk studies the risks and uncertainties within low carbon transition pathways, and how transitions can be implemented in ways that are technically, economically and socially feasible.

Quantitative tools, such as models exploring the future climate evolution and its impacts, as well as the costs and benefits associated with different mitigation pathways face a high degree of uncertainty. At the same time, critical issues such as public acceptance (or lack thereof) of low-carbon (technology) options are difficult to quantify. On the other hand, qualitative methods can enhance uncertainty analysis and robust decision making process, through the quantification of risks and interrelations of climate change mitigation pathways as well as political opinion and public acceptability. Thus, TRANSrisk's unique approach sees us combining economic computer models with input from people working in the area of study ('stakeholders').

In the above context, TRANSrisk will publish the Open Access Book "*Understanding risks and uncertainties in energy and climate policy: Multidisciplinary methods and tools towards a low carbon society*". The book will present innovative **methodologies and tools** that help devise energy and climate policies that incorporate the key ingredients of robustness. In particular, it will reflect **multi-stakeholder engagement**, since **collective intelligence** helps overcome **quantitative models' limitations**, flexibility to **evolve over time** as new insights are gained, and identification of **ways to trigger policy adjustment**.

The manuscript submission period has come to a close.

The book will be published after the review process which is currently in progress.

Below are attached the Call for Papers and a template for the manuscript.

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