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## Emerging risk – Conceptual definition and a relation to black swan type of events

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The concept of emerging risk has gained increasing attention in recent years. The term has an intuitive appeal and meaning but a consistent and agreed definition is missing. We perform an in-depth analysis of this concept, in particular its relation to black swan type of events, and show that these can be considered meaningful and complementary concepts by relating emerging risk to known unknowns and black swans to unknown knowns, unknown unknowns and a subset of known knowns. The former is consistent with saying that we face emerging risk related to an activity when the background knowledge is weak but contains indications/justified beliefs that a new type of event (new in the context of that activity) could occur in the future and potentially have severe consequences to something humans value. The weak background knowledge among other things results in difficulty specifying consequences and possibly also in fully specifying the event itself; i.e. in difficulty specifying scenarios. Here knowledge becomes the key concept for both emerging risk and black swan type of events, allowing for taking into consideration time dynamics since knowledge develops over time. Some implications of our findings in terms of risk assessment and risk management are pointed out.

Key words: emerging risk; black swans; knowledge; risk assessment; risk management

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