

Moldoveanu + Martin:  
**Stretching the Mind**

Thought Leader Interview:  
**Elinor Ostrom**

Developing Leaders for a  
**World of  
Uncertainty**

# Rotman

*The Magazine of the Rotman School of Management / Fall 2010*

It's  
Complicated...

Risk expert Erwann Michel-Kerjan explains why being selfish today means taking care of others, and other ironies of living in a highly-interdependent world.

Interview by **Karen Christensen**



# RISK MANAGEMENT 2.0: REASSESSING RISK IN AN INTERCONNECTED WORLD

**Karen Christensen: You believe it is time for 'Risk Management, Version 2.0': Why now?**

**Erwann Michel-Kerjan:** The hallmarks of the 21<sup>st</sup> century will likely be more and more unthinkable events, previously-unseen contexts, and pressure to react extremely quickly – even when we can't predict the cascading impact of our actions. And as challenging as things are today on a planet of nearly seven billion people, they will get even more challenging as the population continues to grow. Already, we have reached a degree of interdependence that has never before been experienced: what happens on one continent today can affect people on another continent tomorrow. In economic terms, this means that we are now seeing the emergence of 'security exter-

nalities', whereby the failure of a weak link in a connected system can have devastating impacts on all of its parts, and as a result, sub-optimal investment might exist in some of the individual components. An example is what happened to **AIG** during the recent financial crisis. Its collapse was mainly caused by the operation of AIG Financial Products, a 377-person London unit that was run with almost complete autonomy from the parent company.

Overall, the new risk architecture will be characterized by a much wider variance in possible losses and gains than ever before, increasing interconnections between risks and high-speed movement of people and information. While this trend provides a wide range of positive returns, the flip side is that risks are also more

likely to spread very rapidly. Viruses fly business class, too! Management teams need to challenge themselves to develop more robust scenarios based on the new reality.

**KC: What is the best way to approach risk management in this scenario?**

**EMK:** Globalization has many benefits: the fact that you can see and talk to people around the world using Skype – without paying a penny – is pretty spectacular when you look at where we were just 20 years ago. But it's also much harder to control risk, because not only do you have to control it within your own organization, but now you might be relying on suppliers from 25 different countries. Risk management is no longer an internal matter. It's time for organizations – and even countries – to start mapping out their interdependencies and say to themselves, “Okay, we are shipping Product X from this country to that one; what risks do these two countries currently face?” An earthquake in China is just an earthquake in China for some people, but if you are Wal-Mart and 80 per cent of your suppliers are in China, it immediately becomes a Wal-Mart issue. We have to start mapping our interdependencies to better quantify our vulnerabilities.

**KC: You believe that ‘myopia’ is a major challenge in high-risk environments. Please explain.**

**EMK:** We tend to be very short-term minded: we care a lot about what could happen tomorrow, but much less about what could happen in a week or a month, and even less about what might happen in five years. The recent financial crisis is just the latest illustration of the stunning consequences of myopic behaviour. If you translate this into risk management, it means that we will gladly take actions today to prevent risks that could happen tomorrow, but we rarely take actions to prevent risks that could happen five, ten or 20 years from now.

**KC: In a recent Newsweek column you said that the recent earthquake in Haiti highlights three common obstacles to rationality. Please describe them.**

**EMK:** First, people don't think disasters will happen to them. This is partly because the human mind is not very good at understanding low-probability occurrences. People typically just ignore these dangers. Betting against the odds – or Mother Nature – they continue to build in high-risk areas, and don't prepare. Nine months after Hurricane Katrina in 2005, a survey of 1,000 residents of U.S. coastal areas revealed that 85 per cent of them had done *nothing* to protect their homes against future catastrophes. Second, we fail to learn from the misfortunes of others. After the strong emotions people feel at first during a crisis, their attention fades. This is true in developing and developed countries alike. Third, research shows that we can't grasp the full significance of disaster statistics. If you hear that 150,000 people perished in Haiti, and you later learn that it was more like 230,000, will your brain appreciate the difference? Probably not, but it is huge: 80,000 is more than the total number of people who died last year from car

accidents in the U.S. and the European Union combined. The traditional view of economic rationality says we should care more about two people suffering than one; but often we don't. This is a form of ‘psychic numbing’, a notion that was introduced by psychologist Paul Slovic (my co-editor on *The Irrational Economist*.)

**KC: What does it take to thrive in an uncertain environment?**

**EMK:** First of all, we have to accept the fact that the balance between what you might call ‘normal times’ – when there are no catastrophes to deal with – and ‘disaster times’ – when we or people somewhere are facing the effects of a disaster – is changing. There will be more and more ‘disaster times’ in our future, and as a result, we have to reformat our business models – and more importantly, our mental models – for how to behave in such an environment. The assumptions that were correct 20 years ago do not work anymore. Adapting to this new environment will be a challenge, because people typically favor the *status quo* and don't like change.

**KC: You say that on many critical points relating to extreme-event preparedness, the conventional thinking has been wrong. How so?**

**EMK:** Conventional thinking holds that risks are mainly local and routine – that it is possible to list all of the negative events that could happen, determine their probability based on past experience, measure the costs and benefits of specific risk protection measures, and implement these measures for each risk. Unfortunately, many organizations and governments are still making decisions based on these outdated assumptions. As a result, they do not have the agility required to move quickly to respond to unplanned events and risks. This failure to prepare adequately for surprises impacts not only them, but the people and organizations that they are connected to.

**KC: The Global Risks 2010 Report – which you and your team co-authored for the World Economic Forum – states that the biggest risks facing the world today may be ‘creeping risks.’ Please explain.**

**EMK:** The Wharton Risk Center has been the World Economic Forum's academic partner for its Global Risks Initiative since 2005. The report you mention is published every year and presented at the WEF in Davos. This year we highlighted ‘creeping risks’, which are failures and risks that emerge over a long period of time, so their enormous impact and implications can be vastly underestimated until it is too late. For example, global population growth and the ensuing rise in consumption have implications for access to natural resources, climate change, health and fiscal policy.

As a society, we are far too complacent: if we don't see the crises occurring right in front of us, we don't act. We say, “We should look into better risk management, but not today because it's too costly. Maybe we'll postpone it until next year.” Postponing such decisions can be very dangerous. Take the example of critical

*Continued on page 33*

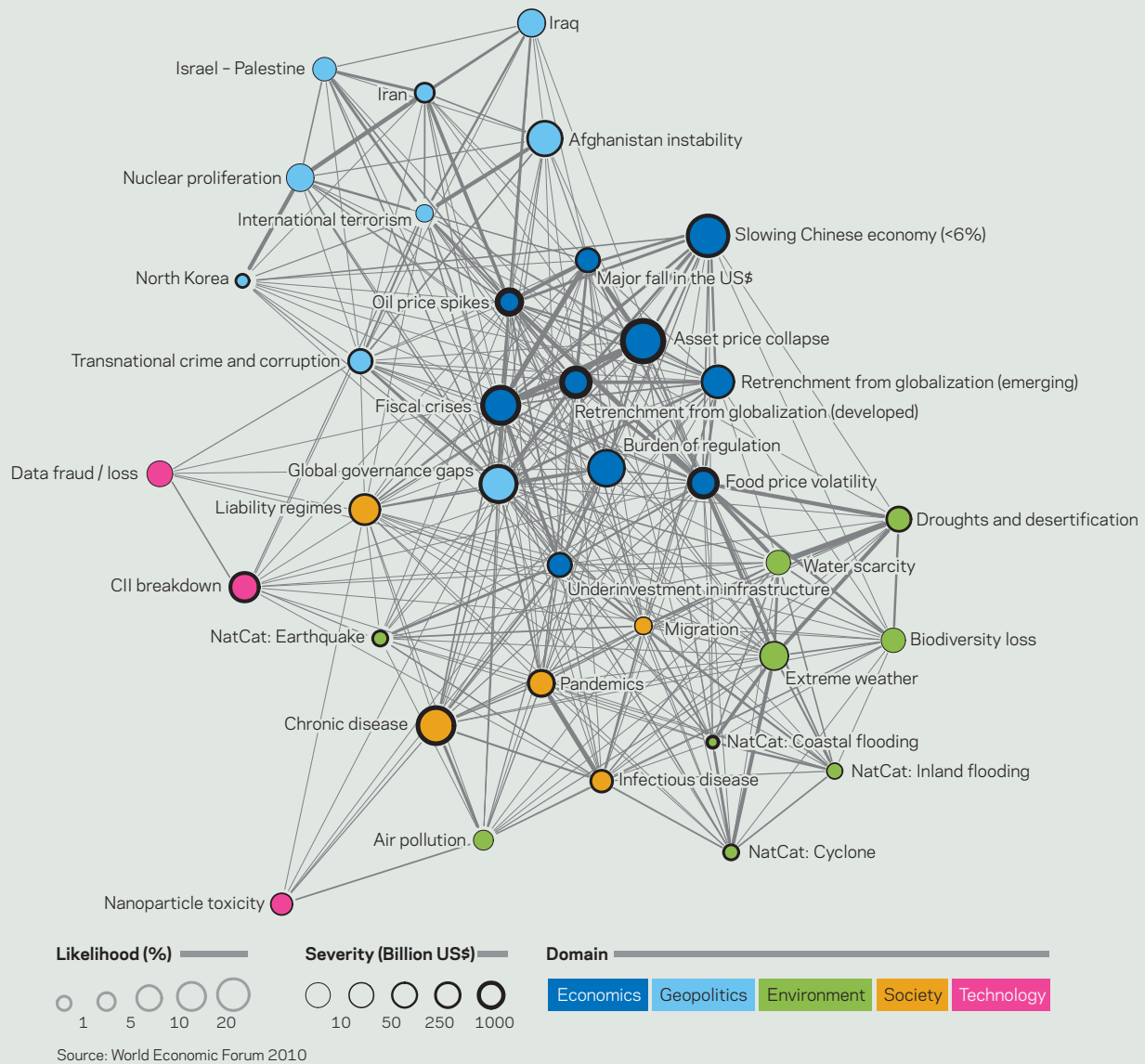
## 2010 Economic Risks

Figure One

Risk Description	Drivers & developments to watch	Likelihood	Severity
<b>Food price volatility</b> Rising and volatile prices affect poor consumers globally (those whose consumption basket is more than 50% food)	<ul style="list-style-type: none"> <li>+ Commodity price fluctuations as a function of the global business cycle</li> <li>+ Commodity price fluctuations as a function of deteriorating climate condition</li> <li>+ Government price ceilings on food prices, leading to reallocation of production and food shortages in the future</li> <li>+/- Input prices, typically related to fossil fuel prices</li> <li>+/- Regional climate variation remains the largest driver of seasonal price volatility</li> <li>- Progress in and access to agricultural technologies allowing for enhanced yields</li> <li>- Proliferation of policy frameworks to foster investments in agriculture and rural development</li> <li>- Implementation of social safety nets specifically targeted to benefit vulnerable societies</li> </ul>	↑	↑
<b>Oil price spikes</b> Sharp and/or sustained oil price increases place further economic pressures on highly oil-dependent industries and consumers, as well as raising geopolitical tensions	<ul style="list-style-type: none"> <li>+ Expected growth rates in key emerging markets</li> <li>+ Extreme weather patterns</li> <li>+ Geopolitical tensions</li> <li>+ Factors driving potential terrorist events</li> <li>- Investments in exploration and production capacity</li> <li>- Economic and political stability in oil-producing countries</li> <li>- Ability of OPEC to establish price floors</li> <li>- Implementation of high energy-efficient, low-carbon technologies</li> <li>- Clear and consistent biofuels policy development</li> </ul>	↑	=
<b>Major fall in the U.S. dollar</b> An abrupt, major fall in the value of the U.S. dollar with impact throughout the global economic and financial system	<ul style="list-style-type: none"> <li>+ Redirection of investments by major U.S. dollar reserve-holding countries</li> <li>+/- Monetary policy differentials in the U.S. and its major trading partners</li> <li>+/- Attractiveness of the U.S. as destination for international portfolio flows</li> <li>+/- Relative growth differentials between the U.S. and its major trading partners</li> </ul>	=	=
<b>Slowing Chinese economy</b> Sudden reduction in China's growth to 6% or Less	<ul style="list-style-type: none"> <li>+ Excess ex-ante savings over-investments in China</li> <li>+/- Chinese government's ability to stabilize domestic demand in the wake of loss in export momentum</li> <li>+/- Ability of Chinese government to maintain stable renminbi in the wake of high foreign reserve accumulation</li> <li>+/- Ability of Chinese government to maintain political stability in the wake of sizeable loss in growth momentum</li> </ul>	=	=
<b>Fiscal crises</b> Overstretch of fiscal positions generates unsustainable levels of debt, rising interest rates, inflationary pressures and sovereign debt crises	<ul style="list-style-type: none"> <li>+ Short-run developments in fiscal positions due to cyclical deterioration, automatic stabilizers and stimulus programmes</li> <li>+ Rising interest rates</li> <li>+ Demographic developments; mainly ageing populations in advanced economies</li> <li>+/- Clarity around the timing and stages of exit strategies</li> <li>+/- Changes in entitlement programs</li> <li>- Reform of social systems</li> <li>- Persistently high rates of inflation</li> </ul>	↑	↑
<b>Burden of regulation</b> If not balanced, regulation can have unintended consequences	<ul style="list-style-type: none"> <li>+ Measures to tighten financial sector regulation</li> <li>+ Government intervention in support of weak corporations in finance and manufacturing</li> <li>+ Changes in rules and red tape governing various industries</li> </ul>	↑	=

**Key:** Same assessment as last year = Increased ↑ Decreased ↓

Plus signs (+) denote drivers increasing risk; minus signs (-) denote drivers that reduce risk



**Get the latest in  
business thinking  
on the go with the  
Rotman App.**

Featuring headline news, faculty research, interviews from Rotman Magazine, video from our events and more!

FREE at the Apple iTunes Store, BlackBerry App Store and wherever Android apps are sold.

*Continued from page 30*

infrastructure, which has become a major issue in the U.S. The country's water, energy and transport infrastructure has been aging for decades and is now deteriorating rapidly, yet we have failed to make the required investments to update it. If you travel to China right now, you will see high-speed trains running between Beijing and several cities that go *twice as fast* as trains in the U.S., and depart every other hour, 24/7. On a smaller scale, it's like having a dishwasher at home that is old and makes funny noises. Do you go out and buy a new one? 'Maybe next year', you tell yourself; it's still working, so it's really not that bad. But what happens is, one day it stops working altogether, and this is on the day when you have 25 guests in the house. Are we waiting to see major infrastructure disasters before we act?

**KC: The 2010 Report calls underinvestment in infrastructure 'one of the most highly-interconnected risks' on its radar and a top-three global risk. Please discuss.**

**EMK:** Infrastructure investment choices are key at any time, but they are particularly critical if the dual challenge of population growth and climate change is to be met. The strongest links in terms of risk are to fiscal crises, oil prices and natural catastrophes, but underinvestment in infrastructure also links to health issues including infectious diseases, chronic disease and food price volatility. The **World Bank** has put global infrastructure investment needs at US\$35 trillion over the next 20 years: that is more than 20 times the GDP of Canada.

**KC: 'Fiscal Crises' rank as one of the other top three risks. What are the key issues for the next few months?**

**EMK:** In response to the global recession, governments intervened in many countries with record stimulus packages. Though their intervention proved vital, they now need to avoid becoming the main cause of the next crisis. Government debt has reached historic levels for peace time in a number of advanced economies. Though necessary at the time, the costs of these interventions, combined with the long-standing burden of pensions and health spending, have left several major economies in a historically weak fiscal position with mounting debt. According to the **IMF**, by 2014, the average debt-to-GDP ratio of advanced economies from the G20 is expected to climb from the pre-crisis level of 78 per cent to 118 per cent.

In contrast, many emerging economies with smaller governments and lower exposure to the banking crisis have kept their fiscal houses in order: according to the same IMF analysis, between 2007 and 2014 the average debt-to-GDP ratio of emerging countries that are in the G20 will never exceed 40 per cent. For once – and in contrast to the 1980s and '90s – emerging economies are not the cause of a global fiscal crisis! Governments in the U.S. and U.K. in particular are now faced with a set of tough choices, all with consequences for future global risks. The most pressing is how to time a gradual and credible withdrawal of fiscal stimulus so that the recovery is sustained, but not so late that fiscal deficits cause a flight to safety

that could drain their economies of capital and confidence. Governments need to develop sound exit strategies and communicate them clearly to reassure investors and taxpayers.

**KC: 'Chronic disease' is the other top-three risk for 2010. What are some of its key effects on business?**

**EMK:** One-half of those who die from chronic diseases are in their productive years, so the costs in terms of lost productivity are considerable. On the bright side, evidence suggests that a modest reduction in certain chronic disease risk factors – such as tobacco and unhealthy diets – can result in substantial gains. A Norwegian study estimated that savings of US\$188 million could be made by lowering the population's blood pressure level by a small amount; and a Canadian study estimated that a 10 per cent reduction in physical inactivity could reduce direct healthcare expenditures by CAD\$150 million in just one year.

**KC: People often construct simplified models of how the world works in order to cope with it. What is the wiser approach?**

**EMK:** We all do this, and it's no wonder. Even on a 'normal day', we have so many things to think about: our jobs, our family, our health, etc. If you also had to think about the catastrophes that could occur tomorrow, you would literally stop living. I'm not implying that we have to think about these things every day. At the same time, we do construct simple mental models that work pretty well in normal times, and I think it's time to realize that these models just won't work for us all the time anymore. It's a good idea to have a simple decision making model that works 90 per cent of the time, but to also realize that maybe 10 per cent of the time, that model won't work because the environment is changing.

**KC: You have said that "being selfish today means taking care of others." What do you mean by that?**

**EMK:** This is the irony of living in an interdependent world: if my business or the political stability of my country depends on what you are doing 5,000 miles away from me, your failure to do good catastrophic-risk management can have a major impact on me. Think for instance about a country that doesn't do proper health-risk management and is the origin of a pandemic that quickly spreads around the world (as we have seen in recent years).

We have to find ways to ensure that organizations and countries manage their risks prudently so that they don't affect the rest of the world within a few days. That's what I mean by *being selfish*; I don't just have to worry about my own risk management, but *yours* as well. **R**



**Erwann Michel-Kerjan** is managing director of the Risk Management and Decision Processes Center at the Wharton School of Business. He is the co-editor, with Paul Slovic, of *The Irrational Economist: Making Decisions in a Dangerous World* (PublicAffairs, 2010). The Global Risks 2010 report, published by the World Economic Forum, is available at [weforum.org/en/initiatives/globalrisk/Reports](http://weforum.org/en/initiatives/globalrisk/Reports)