AS the oil spill in the Gulf of Mexico follows on the heels of the financial crisis, we can discern a toxic recipe for catastrophe. The ingredients include risks that are erroneously thought to be vanishingly small, complex technology that isn’t fully grasped by either top management or regulators, and tricky relationships among companies that are not sure how much they can count on their partners.

For the financial crisis, it has become clear that many chief executives and corporate directors were not aware of the risks taken by their trading desks and partners. Recent accusations against Goldman Sachs suggest the potential for conflicts of interest among banks, investors, hedge funds and rating agencies. And it is clear that regulators like the Securities and Exchange Commission, an agency staffed primarily with lawyers, are not well positioned to monitor the arcane trading strategies that helped produce the crisis.

The story of the oil crisis is still being written, but it seems clear that BP underestimated the risk of an accident. Tony Hayward, its C.E.O., called this kind of event a “one-in-a-million chance.” And while there is no way to know for sure, of course, whether BP was just extraordinarily unlucky, there is much evidence that people in general are not good at estimating the true chances of rare events, especially when human error may be involved.

There was another major blow-out in the gulf 31 years ago by the Mexican rig Ixtoc I. So was this really a one-in-a-million risk?
In the current spill, the problems of assessing risk were complicated by the teamwork required among BP; Transocean, which owned the rig; and Halliburton, which had provided services like concrete work.

“Of the 126 people present on the day of the explosion, only eight were employees of BP,” reported Ian Urbina in The New York Times. “The interests of the workers did not always align.”

How can government reduce the frequency and the severity of future catastrophes? Companies that have the potential to create significant harm must be required to pay for the costs they inflict, either before or after the fact. Economists agree on this general approach. The problem is in putting such a policy into effect.

Suppose we try to tax companies in advance for activities that have the potential to harm society. First, we have to have some basis for estimating the costs they may inflict. But before the recent disasters, companies in both the financial and oil drilling sectors would have claimed that the events we are now trying to clean up were, well, one-in-a-million risks, suggesting a very low tax.

Alternatively, an offending party could be made to pay after the fact, by holding it responsible for the costs it imposes. BP has volunteered that it will pay for all damages it considers “legitimate,” but we can expect a fight over how to define that word.

Twenty years after the Exxon Valdez accident, the payments are only now winding down. And many companies now operating rigs do not have BP’s big pockets. Suppose a company worth only $1 billion was responsible for this accident. It would go bankrupt and we would be unable to collect. And if we aren’t careful, we will encourage companies that have enough money for collection to leave the drilling to those that don’t.

In thinking about governmental reform, one place to start is the 1990 Oil Pollution Act, enacted after the Exxon Valdez accident. The law fines companies $1,000 for every barrel spilled, $3,000 if they were found negligent, and holds them responsible for the costs of cleanup. They are also responsible for economic damages, like those to fisheries, but these costs are capped at $75 million unless there is negligence or a violation of safety rules.

We could raise the cap on damages, as some have suggested, but the uncapped removal costs will typically exceed economic damages, and there is a real concern about whether companies will have the ability to pay. A policy with some appeal might make drilling rights include a mandatory insurance policy with a big deductible, say $100 million, and a cap
somewhere in the billions. In an ideal world, this would influence insurance companies to monitor risks closely. (But the recent experience with the American International Group reminds us that we do not live in an ideal world.)

FURTHERMORE, this economic solution assumes that companies make good decisions once they’re given correct incentives. But the financial and oil crises should make us less confident that companies are up to the task. Mr. Hayward has acknowledged that it was “an entirely fair criticism” to say the company had not been fully prepared for a deepwater oil leak. “What is undoubtedly true,” he said, “is that we did not have the tools you would want in your tool kit.”

The spill has reduced BP’s market value by 44 percent, or about $82 billion, so it’s clear that BP had a strong economic incentive to make good contingency plans. How to require sufficient contingency planning should be a high priority in the future, along with ensuring that the Minerals Management Service has the expertise to evaluate those plans. As a Coast Guard inspector said at a Congressional hearing last month, “The pace of technology has definitely outrun the regulations.”

We are left in a difficult place. Neither the private nor the public sector seems up to handling these kinds of problems. And we can’t simply wait for the next disaster, because, as people might say if they had to use G-rated language, stuff happens.

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