

Addressing The Disconnect

A new book explores the factors that motivate consumers, carriers and regulators in their decisions about insurance.



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Mark V. Pauly (left), Bendheim Professor in the Department of Health Care Systems, and Howard C. Kunreuther, the James G. Dinan Professor, Professor of Decision Sciences and Business and Public Policy, take a stroll in the Jon M. Huntsman Hall on the campus of the Wharton School, University of Pennsylvania.

Editor's Note

This article is an exclusive essay previewing the book *Insurance and Behavioral Economics: Improving Decisions in the Most Misunderstood Industry* by Howard C. Kunreuther and Mark V. Pauly.

We are all very familiar with insurance in our daily lives. One would think that this familiarity would translate into wise insurance purchase decisions: trading a small premium for protection against a large loss when the price is right. Similarly, one would expect insurers to use data on the likelihood and consequences of specific events to determine a risk-based premium. Finally, one would expect regulators to permit insurers to charge premiums that reflected risk.

Such reasonable behavior by these parties is often the exception. In this article we review research findings and concepts that point toward increasing our mutual comfort level when it comes to insurance, while at the same time suggesting ways to improve individual and social welfare.

Many consumers do not appreciate insurance. There is often a long interval between the time one pays a premium for protection and the occurrence of an insured loss. Sometimes, a consumer never experiences a loss. This is particularly true for low probability events such as a natural disaster damaging your property or a severe illness that requires hospitalization. You pay your premiums year after year and normally do not suffer a loss. When you do make a claim, you normally settle for what the insurer offers. Sometimes your insurer tells you that you have no basis for making a claim, because the event was not covered by your policy.

When you buy an insurance policy, you benefit only when and if you submit a claim after suffering a loss. There is thus a tendency to view insurance as a bad investment when you have not collected after paying premiums for several years. It is difficult to convince people that the best return on an insurance policy is no return at all.

When insurers make decisions on what coverage to provide, their concern is on the impact that a catastrophic loss will have on their balance sheets. Insurers know that if many claims occur simultaneously, as in the case of wind damage from hurricanes, this could have a severe negative impact on their surplus, and in an extreme case could lead to insolvency. Indeed, for events such as terrorism, floods and earthquakes, insurers have perceived those risks to be uninsurable without some backup by the public sector.

The following questions address the above points:

- **To the person who paid insurance premiums but laments not getting anything in return:** Would you have preferred to be the victim of a major weather event? You are acting as if you were “unlucky” to suffer no losses because you were spared property damage!

- **To the person who filed a claim for damages not covered by the policy:** Aren't you aware that the terms of

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a contract will not be changed simply because you and others suffered losses that were excluded from the policy?

- **To the insurer:** Aren't occasional large losses to be expected? Isn't this a reason to price the risk in advance to reflect this possibility and to accumulate reserves or secure reinsurance to cover catastrophic losses?

- **To the regulator:** Shouldn't you allow insurers to set prices on their policies so they reflect risk? If some people require subsidies, aren't there better ways to do this than restricting the premiums to be artificially low?

System 1 and System 2 Behavior

The tension between the classical economic theory of rational behavior and behavioral economics with respect to choices made by consumers and insurers is highlighted in Daniel Kahneman's compelling book *Thinking, Fast and Slow*, where he characterizes two modes of thinking: System 1 and System 2:

- **System 1** operates automatically and quickly with little or no effort and no sense of voluntary control. It uses simple associations, including emotional reactions that have been acquired by personal experience with events and their consequences.

- **System 2** initiates and executes effortful and intentional mental activities that demand it, including simple or complex computations or formal logic.

Kahneman argues convincingly that the distinction between Systems 1 and 2 helps clarify the tension between automatic, largely involuntary processes and more deliberate processes in the human mind. Many of the biases that characterize human judgment and choice under uncertainty—including insurance purchasing behavior—are the result of simplified and imperfect decision rules, often triggered by the more automatic and less analytic System 1, whereas the classical economic models that assume that consumers maximize their expected utility and that firms maximize their expected profit require decision-makers to use System 2 to make deliberative insurance-related choices.

Consumer Behavior

To illustrate System 1 behavior (see box above) in the context of insurance, consider the following examples.

Sarah lives in the New Orleans area and has a homeowners policy but not a flood insurance policy. Her home is damaged from storm surge due to Hurricane Katrina. She believes that her homeowners policy should cover the loss. Her insurer refuses to pay any claims because the damage was caused by water and not wind. Homeowners coverage excludes flood-related damage.

Sarah exhibits System 1 behavior by not carefully reading her insurance policy or inquiring from her insurer what coverage was included in the contract. When selling Sarah the policy, her insurer did not clearly explain what was excluded from the contract—another form of System 1 behavior. If Sarah had devoted time to System 2 thinking, she would have carefully read the homeowners policy, collected information regarding the likelihood and consequences of losses due to flood damage and compared the expected costs and benefits of purchasing flood insurance with the decision not to buy this coverage.

Walter has had a flood insurance policy for three years but hasn't suffered a loss. He decides insurance is a poor investment and cancels his policy even though it was initially required as a condition for his federally insured mortgage.

Walter exhibits System 1 behavior by being short-sighted, viewing the premiums he has paid for coverage as a poor investment since he has not received any claims payments. The bank that holds the mortgage

may not be aware of the flood insurance requirement or does not have computer systems that inform Walter that he cannot cancel his policy.

System 2 thinking by Walter would have led him to estimate the likelihood of flood damage to his home next year and its potential consequences, so he could systematically determine whether it was financially worthwhile for him to continue coverage or cancel his policy. He would not have to undertake these calculations if he knew that he is required to have flood insurance as a condition to keep his mortgage in good standing.

Kyle, a 27-year-old designer with a graphics firm, has had an unused health insurance policy because he has never been sick. Being recently laid off, he could continue his insurance for 18 months if he paid the premium; however, Kyle decides to drop this coverage since he thinks it's not worth the money, especially given his loss of income. He does keep collision coverage on the Prius Hybrid purchased just before he got his pink slip because the car was expensive and he sees fender-benders every day.

Kyle exhibits System 1 behavior by treating the likelihood of illness as being below his threshold level of concern due to budget constraints, even though the financial consequences could be significant. Kyle does not seek information on the likelihood of his having a serious illness or an automobile accident. He views the chances of an accident as being sufficiently high that he keeps collision coverage, even though the financial impact would be minor compared to a serious health problem.

If Kyle were to behave in a System 2-like fashion, he would compare the expected benefits and costs of

three different options: (1) Buy health insurance but not collision insurance; (2) Buy collision insurance but not health insurance; and (3) Buy neither type of insurance. To compare these three alternatives, Kyle would need to estimate the probabilities of having health-related illnesses and damage to his car and their financial consequences with and without insurance protection.

Insurer Behavior

Prior to the terrorist attacks of Sept. 11, 2001, insurers provided terrorism protection essentially for free on their property insurance policies, despite the attempted bombing of the World Trade Center in 1993, the 1995 Oklahoma City bombing and terrorist attacks throughout the world. After Sept. 11 most insurers refused to offer coverage against terrorism or charged extremely high premiums for it.

Insurers exhibited System 1 behavior both before and after Sept. 11. Prior to that date, insurers treated the likelihood of a terrorist attack in the United States as so low that they ignored its potential consequences. After Sept. 11 they focused on the potential claims payments from another terrorist attack without weighting these outcomes by their likelihood. As a result they felt terrorism was an uninsurable risk.

System 2 behavior would have led insurers to estimate the likelihood of future terrorist attacks in different parts of the country and their potential consequences. They would then be in a position to determine what types of coverage they would want to offer and the prices they would have to charge so as to maximize their expected future profits based on their current portfolio of policies. By undertaking this type of analysis they could determine whether they would want to limit coverage in specific regions and the necessary premiums to reduce the likelihood of severe losses to an acceptable level.

Most private health insurance provides catastrophic coverage by containing a “stop loss” feature that sets an upper limit on total out-of-pocket payments for coinsurance, copayments and deductibles. However, some company plans attenuate this protection by putting an upper limit on benefits to be paid. In a large insurance plan very few beneficiaries would reach this limit, usually in the millions of dollars, and the company could buy reinsurance to cover these events. As a result, the incremental premium to remove such limits is very low—less than 1% of what the insurer is currently

charging. For example, if health insurance costs \$2,000 a year, then removing the upper limit would add less than \$20 to the premium. And yet many insurers fail to offer this low cost of added protection.

If those at risk followed System 2 behavior, this kind of affordable coverage would be viewed as highly valuable by consumers and should be easy to sell by insurers. The reasons for the gap are not fully understood, but it appears that it is due to System 1 thinking by both buyers of insurance (“it will never happen to me”) and by insurance agents (“I do not want to be the person who sold the policy that is costing our company big money”). It took Congressional action to move health insurance toward coverage consistent with System 2 thinking; health reform requires all private insurance to provide coverage without lifetime or other upper limits.

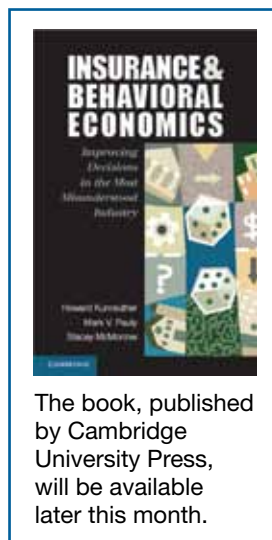
Regulators/Politicians' Behavior

Insurance regulators have aided Florida homeowners in hurricane-prone areas by keeping property insurance rates lower than they would be if private insurers were free to charge premiums that reflected risk. Following Hurricane Andrew in 1992, insurers were only allowed to raise rates gradually over the next decade and were restricted from canceling existing homeowners policies. Moreover, political pressure from residents in hurricane-prone areas to reduce homeowners premiums led the state legislature in 2007 to form a residual market mechanism, Citizens Property Insurance Corp., which offers premiums at highly subsidized rates, thus undercutting the private market.

Today, Citizens is the largest provider of wind coverage in Florida.

There have been no severe hurricanes in the state since 2005, but if Citizens suffers a severe loss from a large hurricane in the coming years, it is likely to become insolvent. In this case, Florida will have to levy a tax on its residents and request disaster assistance from the Federal government.

This example illustrates behavior triggered by short-term System 1 thinking by regulators and legislators. The strategy yields positive returns if there is no hurricane damage in Florida in the near future, but the current premium structure will lead to aggregate claims payments exceeding premiums in the long run. If regulators had undertaken a more systematic analysis of the long-term impacts of their behavior, they should have permitted insurers to charge premiums reflecting risk and found other ways to aid those residing in



The book, published by Cambridge University Press, will be available later this month.

hurricane-prone areas that need special treatment. Just as low-income families are provided with food stamps to buy groceries, low-income residents could be given insurance vouchers so they can afford the higher risk-based premiums.

Why Is Coverage for Extreme Events Misunderstood?

People often buy insurance that makes good economic sense. They buy property insurance on their homes even if they own their house outright. They buy collision insurance on their new cars. They buy life insurance if they have dependents.

But insurance against extreme events poses problems. What is different about this type of coverage?

As already discussed, consumers make decisions based in part on their past experience. If they have recently suffered or seen a significant loss, this is easily called to mind and is likely to motivate them to purchase coverage even at premiums that might be fairly high relative to expected benefits.

Paradoxically, insurance delivers the greatest value—high benefits in the form of claim payments in return for low premiums—exactly in cases of relatively rare events that can cause large losses. These are the potential disasters that people tend to ignore or be less aware of. As a result many consumers do not choose to buy coverage against low-probability, high-consequence events.

Insurers, in contrast, are used to seeing many disasters that individuals rarely experience. A specific house is unlikely to catch on fire but quite a few homes in an insurer's portfolio will. Hence, an insurer can predict with some accuracy the magnitude of total losses from year to year based on the law of large numbers.

What causes problems for insurers is the catastrophic event, which is rare not only for each individual but also for the portfolio of policies in an insurance company's book of business. Earthquakes or massive floods fall into this category: a low probability event such as a severe earthquake, massive flooding or a hurricane such as Sandy that impacted a large portion of the East Coast at the end of October 2012, brings highly correlated losses.

Reinsurers can bundle these events so they are more predictable, but even they have trouble with the truly rare catastrophic disaster like 9/11, hurricanes Andrew (1992) and Katrina (2005) or the Japanese earthquake-tsunami-nuclear disaster of March 2011.

Cases such as these lead to malfunctions and misfires

in insurance decisions by buyers, sellers and regulators. It is here we find most of the problems.

Biases and Heuristics of Relevant Decision-Makers

We now turn to addressing the biases and simplified decision rules that characterize System 1 behavior.

Consumer Behavior

The challenge in overcoming heuristics triggered by System 1 behavior is to provide consumers with data and information to appreciate the need for more-systematic thinking. To highlight ways that this might be accomplished, consider the following rules of thumb and biases illustrated by the previous examples:

- Individuals view insurance as an investment rather than as a protective measure. One way to convince homeowners residing in hazard-prone areas that they should celebrate not having experienced any damage is to indicate the magnitude of their losses should their house and contents be seriously impacted by a natural disaster. It would also be useful to point out that if they were uninsured, these residents would have to rely on their own resources for repairing or rebuilding their property and replacing damaged items. They should reflect on these points before deciding whether to cancel their insurance.

- Many people buy insurance voluntarily only after a disaster has occurred. The event for which they were not covered, such as a flood or earthquake, becomes salient to them after suffering a loss. To correct the availability bias it may be necessary to provide individuals who have not suffered a recent loss with information on the chances of a future disaster causing damage to their property and the likely claims payment if this event occurs. These data enable a person to examine the relevant trade-off between the cost of insurance and its expected annual benefits. They can then make a more informed decision as to how much coverage (if any) to purchase.

- It is common for individuals to underestimate the likelihood and consequences of a low-probability event that they have not yet experienced. Some of those at risk may decide that the likelihood of the disaster is below their threshold level of concern; hence they have no interest in undertaking care or exploring insurance purchasing. One way to convince these individuals to pay attention to the risk and consider insurance is to stretch the time horizon over

Paradoxically, insurance delivers the greatest value—high benefits for low premiums—in rare events that can cause large losses.

which the likelihood of the event is measured. In the 1990s when seat belt usage was not required in many states, a much higher percentage of people surveyed expressed an interest in buckling up when they were given information on the (high) chance of their being in an auto accident during a lifetime of driving, rather than focusing on the (low) chance of an accident on just their next trip. Property owners are more likely to insure against a flood and pay considerably more for coverage when its likelihood is presented as greater than a one-in-five chance of experiencing at least one flood in the next 25 years rather than a 1-in-100 chance of experiencing a flood next year.

Insurer Behavior

Insurance firm managers, even those that have statistical training for dealing with extreme events, have similar biases and heuristics. We suggest the following ways of overcoming their System 1-like behavior.

- Insurers should be encouraged to construct worst-case scenarios for events they feel are below their threshold level of concern to counteract a tendency not to consider certain risks when pricing a policy, as they did with respect to terrorism prior to 9/11. They then should focus on the likelihood of the event's occurrence and determine a premium that reflects their best estimate of their expected loss, factoring in the uncertainty surrounding this figure.

A similar process should be followed after a large-scale event occurs to determine whether the risk is truly uninsurable.

- Annual policies are the norm when it comes to most insurance and reinsurance coverage. Insurers could also consider offering multiyear policies if they are free to price coverage that reflects risk. Multiyear policies diversify the risk over time as well as across individuals, thus reducing the variance in the losses. It would be useful for insurers to compute the annual premium they would have to charge for policies where they kept the premium constant for several years. If insured individuals place a high value on stable prices over time, there would likely be demand for multiyear coverage with premium guarantees rather than highly variable annual premiums. Insurers would also need to determine what protection they would need from reinsurers, the capital markets or the public sector to protect themselves against an unexpected series of catastrophic losses during the time frame

of the policies. A multiyear insurance policy coupled with a long-term home-improvement loan to finance risk-reducing measures may enable policyholders to reduce their overall costs if premiums were risk-based.

Regulator Behavior

Probably the hardest policy issue is constraining System 1 behavior on the parts of governmental policymakers such as insurance regulators.

We cannot appeal to the citizenry as a check on regulators' behavior because voters' instinctive preferences are in many ways the cause of the problem; politicians who seek support make choices that mirror the populace's preferences derived from System 1 behavior.

When it comes to regulation and subsidizing insurance there are some potential mechanical fixes that seem to work: appoint regulators as civil servants rather than having them elected; require hearings and full disclosure before rendering decisions; and encourage a wide range of groups—especially those representing the bulk of consumers—to be properly represented in some way, by more than just self-appointed consumer advocates.

Regulators are likely to be concerned with equity issues by prohibiting insurers from charging risk-based rates to those with lower incomes or those who are at higher risk. Regulatory decisions should

make transparent who gains and who loses from these actions and why some deserve to benefit from a given insurance program and others should have to pay part of the cost of protecting others. Some regulatory actions will come at the expense of those who are not facing a high risk.

For example, requiring windstorm insurers to charge the same premiums for coastal property as for inland property implies that those in non-hazard-prone areas are cross-subsidizing those subject to hurricane damage. Explaining why coastal property owners are deserving of this subsidy would very likely inhibit transfers to the higher income people who usually own beachfront property at the expense of the middle class. We will argue that there are better ways to improve equity than moving away from risk-based rates.

Principles of Insurance

The following guiding principles are designed to make insurance more transparent and equitable than it currently is:

Insurers should be encouraged to construct worst-case scenarios for events they feel are below their threshold level of concern.

Principle 1: Premiums reflecting risk. Insurance premiums should reflect risk to signal to individuals how healthy and safe they are and what preventive or protective measures they can undertake to reduce their vulnerability to illness and/or property losses. Risk-based premiums should also reflect the cost of capital that insurers need to integrate into their pricing to assure adequate return to their investors.

Principle 2: Dealing with equity and affordability issues. Any special treatment given to consumers at risk (such as low-income uninsured or inadequately insured individuals) should come from general taxation (primarily personal and corporate income taxes) and not through subsidized insurance premiums.

Principle 3: Multiyear insurance. To overcome myopia and encourage investment in preventive or protective measures, insurers should design multiyear contracts with fixed annual premiums reflecting risk. Means-tested insurance vouchers should deal with issues of equity and affordability.

We now apply these three principles to the design of property and health insurance policies that might be attractive to the three key parties: consumers, insurers and regulators.

Application to Flood Insurance

The National Flood Insurance Program is a natural candidate for applying these principles. Since its inception in 1968, the NFIP has expanded dramatically. In 2012 it sold more than 5.5 million policies compared to 2.5 million in 1992, and provided more than \$1.2 trillion in coverage compared to \$237 billion in 1992. With its renewal for five years in July 2012, there is now an opportunity to modify the program so it encourages those residing in hazard-prone areas to take steps in advance of the next disaster to reduce their losses.

The NFIP should offer homeowners and business owners a multiyear flood insurance contract (for example, for five years) at a fixed annual premium that reflects the risk (Principles 1 and 3). At the end of the multiyear contract, the premium could be revised to reflect changes in the risk. Such an assessment would be undertaken by a certified panel with the relevant expertise to determine whether there have been systematic changes in the likelihood and/or potential consequences of water damage from flooding and hurricane storm surge to different geographical regions.

To address System 1 behavior, the flood insurance

policy should be tied to the property rather than the owner. If the property is sold, then the multiyear flood insurance contract would be transferred to the new owner. This should be feasible today since the federal government is the provider of almost all flood insurance policies for homeowners. A principal reason for this proposed change in the NFIP is that individuals tend to view insurance as an investment rather than a protective mechanism and policyholders often cancel their flood coverage if they haven't had a loss for several years.

Empirical evidence on this point comes from an analysis of all new flood insurance policies issued by the NFIP over the period of Jan. 1, 2001, to Dec. 31, 2009. The median length of time before these new policies lapsed was three to four years. On average, only 74% of new policies were still in force one year after they were purchased; after five years, only 36% were still in force. The lapse rate is high even after correcting for migration and does not vary much across different flood zones.

In accordance with Principle 2, a new flood insurance voucher program would address issues of equity and affordability. This program would complement the strategy of risk-based premiums for all (Principle 1). Property owners currently residing in a flood-prone area who require special treatment would receive a means-tested voucher by the Federal Emergency

Management Agency or the U.S. Department of Housing and Urban Development as part of its budget or through special appropriation. This program would be similar to the Supplemental Nutrition Assistance Program and the Low Income Home Energy Assistance Program that enable millions of low-income households in the United States to meet their food and energy needs every year. The size of the voucher would be determined through a means test in much the same way that distribution of food stamps is determined today.

In keeping with the concept of risk-based pricing, insurance premiums would be reduced for structures where the property owner has invested in protective measures whether or not the cost of the policy had been reduced through an insurance voucher. A piece of property whose annual expected loss was reduced by \$200 through flood-proofing measures would automatically have the insurance premium reduced by \$200 from the previous year. If financial institutions or the federal government provided home improvement loans to cover the up-front costs of these measures, the homeowner will have a financial incentive to undertake the investment.

The NFIP should offer homeowners and business owners a multiyear flood contract at a fixed premium that reflects the risk it has underwritten.

Application to Health Insurance

When we evaluate the new Affordable Care Act legislation, we find that in some ways, it follows the three guiding principles, but some of its features reflect System 1 thinking or political influences we discussed earlier.

Health reform is designed to satisfy equity and affordability considerations (Principle 2), which is in many ways the most important failing of current health insurance markets. Despite the large premium subsidies currently offered in the form of Medicare, Medicaid and tax breaks to individuals, a significant fraction of the population is uninsured today. More specifically, total subsidies (including tax subsidies to private insurance and direct subsidies to government insurance policies) already lowers the price of health insurance relative to its full cost by more than \$1 trillion in the United States, and makes up more than half of our health care spending.

Medicare subsidizes health insurance for all seniors and the disabled at a rate of 90 cents on the dollar. Medicaid provides free health insurance for some low-income people, and the tax breaks associated with employment-based health insurance subsidize the 60% of the population who get private insurance this way. Yet despite these massive subsidies, nearly 18% of the population is still uninsured at any point in time, in some cases because they are not eligible for Medicaid and/or the premiums for private coverage would bite deeply into their other consumption. However, a sizable minority of the uninsured has large-enough incomes that they could afford premiums but for various reasons attach a low value to coverage. The ACA leaves most of the existing subsidies intact (with only some modest tempering of the subsidy to employment-based insurance), but adds hundreds of billions of dollars of subsidies to insurance for poor and middle-class people.

At present, linking premiums to risk (Principle 1) is satisfied for only the approximately 6% to 8% of the population that buys individual health insurance. Premiums for public insurance and for employment-based group insurance are not allowed to reflect individual risk. The ACA would forbid individual insurance premiums to be based on risk (given age), so there will be even more movement away from Principle 1 than in today's market. The individual mandate is in large part an attempt to offset the disincentives for low-risk participation caused by modified community rating that

varies premiums to some extent with age and location but otherwise charges the same premium regardless of risk level. Low risks (who are often moderate income) cross-subsidize the higher risks by being charged prices that exceed their risk-based premiums. An alternative would be to use an equitable tax such as the progressive income tax to generate funds for helping to subsidize higher-risk individuals, many who are not low income. We are not objecting to subsidizing individuals with genetically caused high risk, but subsidies should not be given in the form of insurance premium reductions but rather through insurance vouchers in the spirit of Principle 2.

One principle that is honored reasonably well today and is also in the new health reform legislation is multiyear insurance (Principle 3). All private individual insurance carries a provision guaranteeing renewal in the following year at premiums that are not altered based on any change in the person's risk. In other words, there is multiyear coverage against risk reclassification, and this provision is continued by the ACA. Employment-based group insurance provides similar protection to people who keep working—but employees who lose their jobs may also lose their health insurance coverage. Public insurances are all single-period, but so heavily subsidized that year-to-year changes in risk or personal

circumstances do not impact premiums.

What do these deviations from guiding principles imply about ways to improve health insurance markets? We note first that the failure to buy health insurance in some current markets probably does reflect System 1 thinking by a small but policy-significant group of consumers: about 3% to 5% of middle-class people at average risk just do not seem to understand the value of health insurance for themselves and their families. The strongest evidence for this is the fraction of workers who choose no coverage even where the employee premium is a tiny fraction of the full premium. However, even now and surely in the future under community rating, many other low risks might be reluctant to buy coverage even with the modest penalty under the mandate: they look ahead and decide that, at a premium that they feel overcharges them to help higher risks, health insurance is not a good buy. Should they someday become a higher risk, they note that they will then pay the same premium whether they bought insurance now when they are a low risk. Hence they will be discouraged from buying a

About 3% to 5% of middle-class people at average risk just do not seem to realize the value of health insurance for themselves and their families.

policy today. The problem then is not irrational behavior by consumers but the distorted incentives that are part of community rating, which discourage the purchase of insurance by low risks and encourage excess coverage by high risks.

Perhaps policymakers think that community rating is the only way to achieve the appropriate social goal of helping out modest-income high risks. We feel that other ways should be considered: government organized high-risk pools adequately funded by efficient and equitable general revenue taxation as a short-term solution, and mandatory coverage with guaranteed renewability at premiums that do not vary with changes in risk as a longer-term plan. These steps, with appropriate insurance vouchers to help lower income people at all risk levels, would lead toward a solution more consistent with our principles.

Beyond the distortionary effects on insurance purchasing of the ACA's modified community rating, will it affect incentives to prevent or mitigate high risk? The impact will probably be moderate because the law does permit premiums to be adjusted to reflect smoking behavior and participation in formal workplace wellness programs, and because most insurer-paid medical preventive care, while significantly improving health, does not reduce net medical care costs. The latter occurs because the increase in premiums to cover the cost of preventive services provided to everyone is usually not fully offset by lower spending on the minority who might avoid high-cost health episodes. The only serious downside to community rating is that it will discourage informal behavioral changes by individuals to lower their risk, like exercising and changing diet. People who do such things will be healthier, but they cannot be rewarded for their reduction in expected future claims by targeting lower premiums specifically at them.

Conclusions and Future Research

Insurance is a potentially powerful tool to encourage those at risk to reduce their losses in advance of a disaster but it requires consumers, insurers and politicians to overcome their myopic behavior. Long-term vision is required to overcome the biases and heuristics that characterize System 1 behavior. The biggest challenge in this regard by all three groups occurs when they confront low-probability, high-consequence events, such as a catastrophic loss from natural disasters.

We conclude that there should be a more rigorous framework than is currently in place for developing

strategies for using insurance in combination with other policy tools. We have outlined some principles for doing that, ranging from uncontroversial but hard-to-implement measures, like providing more transparent insurance contracts, to more controversial advice like having premiums reflect risk supplemented by insurance vouchers for dealing with equity and affordability issues.

Legislators and regulators who follow these principles need to have their bravery recognized and rewarded. Getting things right, especially at a time when insurance companies are unpopular and high-risk groups are powerful, often implies being at political risk.

Insulation of regulation from political pressure, for example, by having appointed rather than elected regulators, is a step in that direction. But the most important step may be a full and frank societal discussion of the roles insurance markets should play and the behaviors we really think important to foster or alter.

The insurance industry is misunderstood. Buyers of its products have a hard time comprehending what they are getting, partly because of avoidable confusion but also because risk is fundamentally a complicated concept that is difficult to explain in simple language. Sellers of insurance believe that they are often unfairly blamed for being the bearers of bad tidings. They enter the scene after a disaster and are often accused of not

settling claims promptly or fairly. They compound the misunderstanding by pulling out of the market or increasing premiums significantly.

One of the remedies for a misunderstood industry is increasing our understanding of it, which is a goal of this article. The renewal of the National Flood Insurance Program in July 2012 authorized studies by the Federal Emergency Management Agency and the National Academy of Sciences to examine ways of incorporating risk-based premiums coupled with a means-tested insurance voucher, two principles discussed here and in our forthcoming book. The new health reform legislation addresses potential buyer myopia but may have created some additional problems because of its failure to permit risk-based pricing.

Flood insurance reform and health insurance reform offer an opportunity for the private and public sectors to work together to make the insurance concept more meaningful than it currently is and to help those who purchase coverage make more thoughtful decisions under System 2 behavior rather than System 1 heuristics and biases.

Getting things right, especially when insurance companies are unpopular and high-risk groups are powerful, often implies political risk.

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