The Long Road Back

Signal Noise in the Post-Katrina Context

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On August 29, 2005, the nation watched as Hurricane Katrina pummeled the Gulf Coast, inflicting more than $100 billion of property damage across broad swaths of Louisiana, Mississippi, Texas, and Alabama and ultimately claiming more than 1,600 lives (Franklin 2006; McMillan 2006). In the wake of this catastrophic destruction, hopeful signs of community resilience appeared. Within days of the storm, many residents along the Mississippi Gulf Coast had come home and begun to rebuild. Soon after floodwaters had receded from devastated St. Bernard Parish, district officials announced they would reopen a school by November 14 and pledged to serve any child who returned to the community. In New Orleans East, members of the Vietnamese American community organized to gut, clean, and restore their homes and businesses, despite being told by city officials that it was unlikely they would be allowed to rebuild. Impressive as these and other efforts were, however, one cannot help but ask why, despite the community resilience visible in some areas, the overall pace of recovery has been so desperately slow.

At the present writing—eighteen months after the storm—entire communities and neighborhoods still feel like ghost towns. If not for the advancing mold growing inside wrecked homes, many neighborhoods would look as though the hurricane passed through only a week earlier. This situation is certainly the case in poor, pre-

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dominantly African American communities, such as the Lower Ninth Ward, but entire blocks in posh neighborhoods such as Lakeview and previously vibrant middle-income communities such as Gentilly also remain largely untouched.

To many observers, the slow pace of recovery needs no other explanation than common sense, considering that the scale of destruction was so immense. In New Orleans alone, nearly two hundred thousand homes were destroyed or rendered uninhabitable. Along the Mississippi Gulf Coast another seventy thousand homes were destroyed.[1] Yet when we consider the scale of devastation and the subsequent recovery from other previous disasters—such as the Chicago fire of 1871, the San Francisco earthquake of 1906, and the bombing raids on Germany and Japan during World War II—we find reason to expect recovery as the rule (Hirshleifer 1987).[2]

That federal aid for reconstruction has been inadequate or slow to arrive provides another possible explanation. But the commitment of $110 billion by the federal government—including $7.5 billion through the Louisiana Road Home Program (U.S. White House 2006), payments of more than $23 billion from the subsidized National Flood Insurance Program (NFIP) (Eaton 2006; Marron 2006), and the subsidies offered under the Gulf Opportunity Zone and other tax credits—and a long history of successful postdisaster recovery in the absence of large-scale government assistance again suggest that further explanation for the slow recovery is required (Pelling 2003; Vale and Campanella 2005).

Thomas Schelling has attributed the halting pace of recovery to a massive problem of collective action. Without assurances that others will return, people are reluctant to take on the disproportionate risks of returning, for fear that they might end up as the only residents on a block of wrecked, abandoned houses (quoted in Gosselin 2005). Given how scattered many former Gulf Coast residents are now, it may be difficult for them to convey to one another a credible commitment to the rebuilding process.[3] Yet civil and commercial society offers strategies for overcoming this signaling problem. Thus, the mystery remains as to why such signaling processes have not fostered a more robust response.

Common to each of the standard explanations—the immense scale of the dev-

1. The Congressional Research Service estimates that 100 million cubic yards of debris required removal along the Gulf Coast. Before Katrina, the biggest cleanup effort in U.S. history followed Hurricane Andrew, which generated 43 million cubic yards of debris (Luther 2006).

2. See also http://www.econlib.org/library/Enc/DisasterandRecovery.html. The expectation of robust recovery extends at least as far back as J. S. Mill, who observed that productive activity "affords the explanation of what has so often excited wonder, the great rapidity with which countries recover from a state of devastation; the disappearance, in a short time, of all traces of the mischief done by earthquakes, floods, hurricanes, and the ravages of war. An enemy lays waste a country by fire and sword, and destroys or carries away nearly all the moveable wealth existing in it: all the inhabitants are ruined, and yet in a few years after, everything is much as it was before" ([1848] 1909, book I, chap. V, paragraph I.5.19).

3. See the map "Katrina's Diaspora," based on assistance applications as of September 23, 2005, at http://www.nytimes.com/imagepages/2005/10/02/national/nationalspecial/20051002diaspora_graphic.html.

astation, the lack of government resources, and problems of collective action—is the implied policy conclusion that more government resources or authority are necessary to overcome these problems. Federal policymakers certainly appear to be guided by this perspective, if we may judge by legislation proposed after the storm.[4] Redevelopment planning initiatives proposed by local governments also seem to build on the paradigm that an orchestrated and centralized government effort is required. My observations here, in contrast, challenge the notion that increased government spending and greater government authority mark the obvious path to recovery. Indeed, I argue that government policy and programs are the principal source of the problem.[5]

The enigma of why post-Katrina recovery has been so slow is similar to the puzzle that economic historian Robert Higgs (1997, 2006) analyzes in his investigation of why the pace of recovery was so slow after the trough of the Great Depression. He examines in particular the failure of private investment to return to pre-Depression rates until the latter half of the 1940s—a pace of recovery widely acknowledged to be significantly slower than historical experience would have led one to expect. He argues that a principal source of the problem was what he calls "regime uncertainty," in which the state increasingly undermined public trust in the durability of private-property rights and the rule of law. Without the assurance that the state would abide by and enforce these rules, entrepreneurs and investors remained on the sidelines, stalling economic recovery. Public-policy measures that dramatically increased corporate and individual taxes, Supreme Court rulings that upheld government control over private business activity to an unprecedented extent, and Roosevelt administration rhetoric that portrayed the business community as hostile to the public interest dampened market signals and crushed the incentives that otherwise would have emerged naturally to spur a rebound from the economic downturn. A similar effect is impeding the post-Katrina recovery process: public policy is distorting the signals emerging from markets and civil society that would otherwise foster a swift and sustainable recovery.

Since the storm, residents and business owners across the Gulf Coast have been looking for signals—cues as to where they should devote their time and resources—regarding whether and when their communities and customer bases are going to

4. For example, a proposed amendment to the Stafford Act (HR 5392) would have extended unemployment benefits for areas affected by Katrina and Rita to a total of fifty-two weeks; the Loan Disaster Contracting Fairness Act of 2006 (S 2774) would have required federal rebuilding contracts to give preference to local contractors and subcontractors; and, if passed, the Restoring Emergency Services to Protect Our Nation from Disasters Act (HR 5316) will expand the scope of government oversight at a cost well in excess of $1 billion.

5. The observations made in this article are based on fieldwork conducted in the Gulf Coast region in February, March, April, June, and October 2006, including more than one hundred in-depth interviews with people engaged in the rebuilding process. This fieldwork was the first part of what will eventually be a five-year study of the political, economic, and social forces that shape disaster preparation, response, and recovery (see http://www.mercatus.org/programs/pageID.504,programID.6/default.asp). The 2006 research team included Lenore Ealy, Daniel D'Amico, Adam Martin, Daniel Rothschild, Tony Skriba, and myself.

return and in what form.[6] Not only the built environment matters in people's assessment of whether their community is rebounding, but also the return of social systems that connect individuals and their families to one another through formal and informal neighborhood groups and through the services and social spaces created by schools, businesses, religious groups, and nonprofit organizations. In such a context, the signals coming out of civil and commercial society—signals about who is coming back and when, and what services will be provided—play a critical role in the recovery process.

Yet in the post-Katrina environment many of the signals on which people depend to make informed and responsible decisions have become difficult to read or distorted. I call this distortion "signal noise": the persistent distortion of signals that does not self-correct, making the underlying signal more difficult for people on the ground to read and interpret.[7] Disaster-relief policies and procedures, government management of flood-protection and flood insurance programs, and the regime uncertainty created by postdisaster redevelopment planning are principal sources of this noise, distorting the signaling process that otherwise would guide swift and responsible adjustment to the new circumstances.

In the next section, I briefly describe specific strategies by which some Gulf Coast communities are successfully rebuilding and how civil and commercial society is generating the signals necessary for a robust recovery. Next, I discuss some of the ways in which government programs and policies inhibit these community-based strategies by generating signal noise. I then explore the policy ramifications of this research and conclude by offering suggestions for how policymakers can reduce signal noise in dealing with future disasters. I argue that as federal and state governments move forward with refining disaster-response policy and as state and local governments proceed with redevelopment planning initiatives, they should aim at minimizing the distortions that government intervention and oversight introduce into the recovery process.

Community Rebuilding Strategies

The arguments presented here developed out of a study investigating the role of social capital in post-Katrina recovery efforts. The original purpose was to analyze sources of community resilience. A full discussion of the findings is presented elsewhere (Cham-

6. The *New Orleans Times-Picayune* publishes a weekly update cataloging "signs of recovery." Items on the list include the removal of long-standing and well-recognized debris, the opening of performance venues and restaurants, and number of births at area hospitals.

7. The concept of signal noise comes from engineering. "Signal-to-noise ratio" in radio communications refers to the amount by which static and interference dilute the signal of, for instance, a commercial radio station. As the noise surrounding a signal becomes stronger, radio listeners find it more difficult to follow the music. Other social scientists have used the concept of signal noise and discussed its effects, most notably Robert Lucas (1972).

lee-Wright 2006), but in order to establish the importance of signal noise I summarize them here. The problem of signal noise looms so large in rebuilding after Hurricane Katrina precisely because of the importance of the signals that are blocked. Communities on the Gulf Coast are relying on the signals generated by their neighbors, friends, nonprofit organizations, and commercial partners to make decisions about rebuilding. Returning residents see the reopening of schools and grocery stores, the resumption of church services, and calls for neighborhood association meetings as signs of community rebirth. Systematic distortion that dampens or drowns these signals undermines civil and commercial society's ability to drive the recovery effort.

Communities that have succeeded in their redevelopment efforts have obviously had to deploy human, financial, and physical capital. Complementing these resources, however, is another essential form of capital—social capital. Social-capital resources are those embedded in networks of friends, neighbors, faith communities, clubs, krewes, businesses, and so on. Redeveloping and deploying the complex mix of resources that constitute social capital have proven vital to successful recovery. In particular, communities rebuilding after Hurricane Katrina are employing a variety of different strategies based on this social capital, each of which serves an important signaling function.

The most prevalent of these strategies is mutual assistance, by which storm survivors support one another by exchanging labor, expertise, shelter, child-care services, and tools and equipment. Mutual assistance serves as a source of material support, but, more important, it sends signals that members of a community are committed to recovery and helps to restore the fabric of communities torn apart by disaster. The signals sent by such assistance demonstrate to residents who are considering returning that others are sharing both the burdens and the risk of returning and that a community—not just a plot of houses—is rebounding. Governments might ostensibly provide some of the material support that mutual assistance provides, but such aid would drown out the signals that residents desperately need and that help reestablish the social systems that make up community life.

A second strategy is charitable action. Unlike mutual support, which relies on reciprocity, charitable action consists of one-way offers of direct assistance from individuals and private philanthropies largely outside the affected areas. Because charitable action is decentralized and hence nimble, nuanced, and able to respond effectively to individual and small-group needs, it provides signals of how interested third parties wish to invest their financial, labor, and physical resources in helping others to rebuild.

A third strategy is commercial cooperation. Like mutual assistance, commercial cooperation provides both material support and signals that businesses—and hence goods, services, and jobs—are returning to a community. It is especially vital in an area that has suffered widespread physical devastation, where cleaning and rebuilding materials are vital to physical recovery. As in mutual assistance, a spirit of enlightened self-interest drives commercial cooperation and provides a crucial element of recovery.

When commercial relationships that are taken for granted in a normal setting—such as access to grocery stores, banks, barbers, and hospitals—return to communities after disaster, they send crucial signals about sustainability. Government provision of the goods and services that businesses would otherwise provide delays the reemergence of commercial signaling and therefore delays recovery.

Finally, a strategy I call "build it and they will come" occurs when private citizens, business owners, and community leaders create or redevelop a key community resource that might serve as the tipping point for residents, businesses, and organizations to return. For instance, in New Orleans East, the resumption of church services at the Mary Queen of Vietnam Catholic Church soon after the storm stimulated a rapid return of the Vietnamese American community, and the opening of a unified school in St. Bernard Parish drew thousands of students and their families back to the community. By casting an entrepreneurial gaze at the resources available for redevelopment, community leaders and ordinary citizens seek to solve one crucial piece of the redevelopment puzzle, making it possible for many more to return and sending a strong signal that the community is on the rebound. Noise emanating from policies can muffle these signals, however—or squelch them altogether by failing to provide and enforce the rules of the game for rebuilding or by creating rules that forbid or delay such reopenings through regulation, economic distortion, or disrespect for private-property rights and contracts. Rigid adherence to regulatory structures ill-suited to the postdisaster context similarly creates noise that affects these signals.

Through these and other patterns by which social capital is deployed, individuals in postdisaster contexts use signals generated within markets and civil society to make intelligent decisions about how, where, and when to rebuild their communities and their lives. Hence, policymakers should craft both pre- and postdisaster policy to allow these signals to emerge and should not unintentionally create noise that drowns out the signals or distorts them so they no longer guide people effectively in their efforts to make informed and responsible decisions for themselves.

Sources of Signal Noise in the Post-Katrina Context

The robustness of signals emanating from markets and civil society depends crucially on the institutional rules that undergird social coordination—the rule of law, private-property rights, contract enforcement, and basic rights of self-determination. As crucial as these rules are for day-to-day interaction in normal circumstances, they are even more important to uphold in the wake of disaster. By sustaining such institutional rules, governments at all levels can reduce signal noise.

Yet in the course of our team's investigations of community rebound, we encountered time and again people frustrated by the confusion and uncertainty in decision contexts. Their frustration arose not simply because there was much to learn, but because they had to waste time learning about things that ultimately seemed

superfluous to the recovery effort, such as navigating the bureaucratic maze of relief agencies and regulatory policy. Worse yet was the sense of frustration they felt when they realized that no amount of effort on their part would reduce the uncertainty they faced because the institutional rules of the game seemed always to be in a state of flux. Ironically, the public policies designed to protect against and recover from disasters are often the principal sources of these frustrations.

Regulatory Rigidity and Disaster-Relief Noise

In the wake of devastation such as that inflicted by Hurricane Katrina, disaster-relief services are vital to meeting the immediate needs of residents who have been left without food, shelter, medical care, and other essential services. Yet as communities set out on the long road to recovery, relief efforts can sometimes impede rather than advance the recovery process.[8]

The bureaucratic structure governing disaster relief can stifle or, at the very least, frustrate the local leadership that drives community redevelopment.[9] Doris Voitier, superintendent of the St. Bernard Parish Unified School District, pledged to reopen a school just eleven weeks after the storm. Voitier had initially assumed that the Federal Emergency Management Agency's (FEMA) newly created task force on education would lend support to her effort to redevelop the school district. She soon learned, however, that FEMA's role was not so much to lend support as it was to regulate the decisions coming out of her office.

> *Voitier:*[10] [W]e had our kickoff meeting in September. We didn't even know what a kickoff meeting was, nor did we know we were in one until after it was over. . . . In their little book, which I read later, they tell them, "meet in the person's home territory," basically. Now . . . we were operating out of Baton Rouge, and so were all of the people who attended this meeting. We all got rental cars and drove down [to St. Bernard Parish] and met on the third floor of the building over by Chalmette Refining at two o'clock in the afternoon in one-hundred-degree heat with no air conditioning or anything. [M]y assistant superintendent and I walk into this

8. For a recent discussion of why government efforts so often fail to provide effective disaster-relief assistance, see Sobel and Leeson 2007.

9. The opaque bureaucratic structure governing relief aid also affects the ordinary citizen. The process by which people can receive aid is anything but transparent. Before applying to FEMA for a grant, for example, a resident seeking assistance must apply for a Small Business Administration (SBA) loan, regardless of whether he thinks he will qualify. Having gone through the SBA application process, he can then apply for federal assistance. Many people turn down the approved SBA loan because they cannot make the payments and then falsely assume that they cannot apply for FEMA assistance.

10. In quotations from interviews, when a first name only is used to identify a subject, it is a pseudonym. When the narrative identifies a subject, as is the case here, we have gained permission to reveal the person's name and title and to quote him or her.

> meeting, and there were twenty-seven people in this meeting are sitting around this table . . . and we were going through the introductions. And the first two people said, "We're so and so. We are the FEMA historical restoration team. I said, "OK, tell me what you do." "Well, we make sure any buildings that are forty years old or more, they're designated a historical building, we make sure all of the rules and regulations are followed for that or if there are any historical documents, paintings, or whatever, that they're preserved properly, and that you do everything you're supposed to do." . . . Now here we are just trying to, you know, trying to recover, not worrying too much about that sort of stuff, but . . . thank you very much. So the next two introduced themselves, and I said, "Well, who are you?" "We are the FEMA environmental protection team." I said, "Tell me what you do." Well, same thing. "We make sure all of the environmental laws are followed, that if there are any endangered species that they're protected," you know, yadda, yadda, yadda. OK. The next two, "We are the FEMA 404 mitigation team." I'm looking at them, and I'm thinking, "What in the heck is 404 mitigation?" Because the next two were the FEMA 406 . . . so I'm looking at them, I'm thinking, "I don't know what 404 was, and I certainly don't know what 406 is. . . . And you know . . . can't somebody help me get a school started and clean my schools?"

Voitier's description of her interactions with FEMA raises the question of whether the federal relief agency is actually providing relief or sees its mission as reining in local decision makers. Further, it raises the question of how FEMA processes divert those who are in the best position to advance recovery efforts. The time and attention it takes for social entrepreneurs such as Voitier to understand the internal workings of FEMA's structure and the regulatory regime dictating its decisions exemplify what economist Israel Kirzner (1979) calls "superfluous discovery"—the directing of entrepreneurial alertness (in this case, social-entrepreneurial alertness) to learning how to navigate in a bureaucratic system rather than to creating wealth. Voitier reported, for example, that she has had to become an expert on the Stafford Act because it defines the narrow field within which she can act. As a hospital administrator put it after describing the differences between Category B, Category E, and Category H restoration and mitigation, "that's why administrators keep our jobs . . . because we are supposed to try and figure out the regulations."

Voitier's efforts to operate within the guidelines of the Stafford Act were not enough to keep her in FEMA's good graces. After registering many more students than she initially anticipated, she ordered two additional trailers to use for classroom space. The trailers that were eventually delivered were deemed unsuitable for student use because two doors in each trailer were too close together to comply with the local fire code. While she went through several layers of bureaucracy to have the spaces widened, she received permission from a FEMA official to put washers and dryers in

one of the unused trailers so that the teachers living in the school's parking lot could wash their clothes. Soon afterward, when this same FEMA representative was rotated out of the area, the new representative subsequently placed Voitier under investigation for "misuse of federal property."

Like the bureaucratic rigidities embedded in federal relief agencies, state and local regulations can also have a stifling effect on civil society's ability to respond in the months following a crisis.[11] After the storm, many parents faced the daunting task of navigating the system of relief services and beginning the demolition process while caring for young children. The temperatures were high, stress levels were higher, and the lines were long, but professional child care was in short supply. Some daycare providers did what they could to open their doors to disaster victims in the weeks and months that followed, only to be fined by state regulators if they did not have the prescribed child/teacher ratio and comply with other requirements. The signal that parents sent was a demand for safe, affordable child care—a signal that child-care professionals in both the commercial and philanthropic sectors could easily read—but the regulators stifled this signal and thereby inhibited the emergence of a bottom-up solution to meet disaster victims' needs.

Although many regulations exist for good reasons, such as accountability, environmental protection, and human safety, rigid adherence to them in times of crisis strangles the bottom-up response that local leadership, voluntary organizations, and businesses can provide. Most regulations are adopted in times of relative calm. Even in the calmest circumstances, it is often difficult to assess a regulation's benefits and costs (Dudley 2005). In the aftermath of a disaster, however, the calculus of regulation changes dramatically, and the types of assessments conducted during calmer times may be completely inappropriate guides for sound regulation. For example, a limit on the number of children that one child-care worker can supervise may be sensible under normal conditions, but after a disaster the demand for safe, affordable child-care may change dramatically, and it may make sense to change or suspend temporarily some regulations regarding child care in order to speed recovery and a return to more normal conditions.

Another frequently cited source of frustration has been the creation of what one resident called the "FEMA economy"—meaning the systematic distortion that relief efforts have generated in the local economy. Private businesses trying to get back on their feet have found it difficult to attract employees. Of course, this difficulty has arisen in part simply because many people who left the area before or soon after the storm have not returned to the affected region, but the extension of unemployment benefits has exacerbated this problem. Further, the premium wages that relief agencies pay low-skilled workers crowd private employers out of the labor market. For orga-

11. For similar observations related to the recovery effort following the Kobe earthquake of 1995, see Oakes 1998. See also Alpert 2007 and Hammer 2007 on similar topics.

nizations needing hundreds of service employees, the labor shortage can be particularly daunting as they attempt to resume their operations.

> *Felicia:* Yeah, so if we paid a housekeeper $8 or $9 an hour, and now they are getting $210 a week [in unemployment benefits], do the math. . . .
>
> *Jack:* It affects everybody, you're competing with FEMA, you're competing with everybody, the contractors that are doing debris pick up and stuff, they are paying big bucks. They are paying $12 [to $15] an hour to stand behind a truck with a little ["stop"] sign.

According to a study released in February 2006, two-thirds of firms in the affected region had trouble recruiting workers, and media accounts affirmed employers' recruitment woes ("Survey of Compensation Practices" 2006; see also Anderson 2006; Wulfhorst 2006). Yet in March 2006 Congress extended unemployment benefits for another thirteen weeks beyond the twenty-six weeks of unemployment benefits authorized by the Stafford Act.

The FEMA economy also exacerbates the lack of affordable housing. FEMA workers allotted $1,200 per month for housing, thus effectively crowding out many low-income residents who receive $550–$650 in FEMA rental assistance. Rents in many affected areas of New Orleans have almost doubled since the storm (Meitrodt 2006). This increase is owing largely to the decrease in the supply of housing (50.8 percent of rental housing in Orleans Parish suffered severe flood damage or total destruction),[12] but the thousands of federal and state relief employees in the city have exacerbated the problem.

With sixteen thousand federal workers in the region[13] and $110 billion in federal aid allocated for relief, recovery, and rebuilding, higher rents and wages may be unavoidable and unintended. To the extent that the swift removal of debris and other services are deemed top priorities, wage premiums will certainly facilitate the process. But the longer FEMA workers stay, and the more relief work is treated as a public-works project rather than as the short-term provision of an essential service, the longer these distortions persist. As one Mississippi resident observed, "There's no reason for a business to open up that provides any kind of food service if right down the street you get food [for free]. . . . It was necessary for [government] help to be scaled down so our businesses could come back in, start giving us a tax base, start giving these people an incentive to get a job, to work, to get back to normal. That was essential."

The sooner government relief agencies scale back their operations and cease distorting local labor and housing markets, the sooner commercial and civil society will be able to step in. And the sooner this normalization happens, the more effectively

12. My calculations are based on data from U.S. Department of Housing and Urban Development 2006.

13. This figure is reported in U.S. White House 2006.

a sustainable rebuilding process can proceed because these activities support a functioning community in the long run.

Flood Maps, Flood Protection, and Flood Insurance: Noise, Noise, and More Noise

> If it floods ten times and [the government] keeps giving me flood insurance, I'm going to rebuild it ten times.
>
> —Mike, St. Bernard Parish resident

Many people along the Gulf Coast, in particular New Orleans residents, are caught in a torturous waiting game. For months, people delayed their decisions about whether and how to rebuild in anticipation of the new FEMA "flood maps" because insurability of property depends on the risk assessment the maps indicate. In April 2006, FEMA released its suggested guidelines for how high structures would need to be rebuilt to withstand probable future flooding. The sense of certainty these guidelines gave residents was short-lived, however, because many local governments have yet to adopt the elevations as part of their building code.

Many people also assumed that the new guidelines represented the most up-to-date assessment of flood risk, but in fact they were based on flood maps decades out of date, thus compounding the confusion (Buckley et al. 2006; Hunter 2006). The new flood insurance rate maps (FIRMs)—what are frequently called "flood maps," and the information most crucial for insurance purposes—are not scheduled for release until sometime in 2007. A year after Katrina, Orleans Parish was still covered by FIRMs from 1984. This series of delays and the confusion about which rules apply have put recovery plans on indefinite hold for many people who otherwise would have returned.

Even with the release of elevation guidelines and the promised release of flood maps sometime in 2007, deep uncertainty regarding flood protection is likely to persist. The guidelines and the flood maps give residents of the Mississippi Gulf Coast some indication of their risk vis-à-vis hurricane flooding. Yet the risk assessments on which the maps are based assume that the stated level of protection afforded by the levees will continue (Drew and Treaster 2006). They give no indication of flood risk from a levee breach. The guidelines released in April 2006, for example, recommend residential elevations of three feet in many New Orleans neighborhoods that suffered eight feet of flooding. Although a three-foot elevation might spare a home from wind-related flooding, a levee breach could once again bring catastrophic results.

Thus, the flood maps tend to create a false sense of security. This noisy signal helps to explain why so many people did not have flood insurance, even though they could have purchased it at a dramatically subsidized rate through the NFIP (Buckley et al. 2006.) In communities such as the Lower Ninth Ward, scarcity of means may

have been a factor in the decision not to carry flood insurance, but when asked directly about their decision, most people responded as one Lower Ninth Ward resident did: "I didn't have flood insurance because I was told I was not in a flood-prone area. I didn't need flood insurance. So I didn't have flood insurance." Before Katrina, most of the Lower Ninth Ward was designated as Zone B, an area of relatively low risk.[14] This risk assessment did not capture the possibility that a loose barge might break through the levee, creating a surge that would devastate the entire neighborhood.

Since the storm, many people have come to realize that the strength of the flood-protection system affects their risk, but this awareness is so vague that it tends not to provide a robust guide to action. Many of the residents who plant "Level 5 Protection Now" lawn signs in their yards are probably not aware that such protection would not be in place for another ten to twenty years, even if the political decision to offer such protection were made today (Richardson 2006). Further, uncertainty regarding the integrity of levee protection even for a category-three hurricane, which was allegedly in place before Katrina, keeps people guessing.

> *Derek:* There's just so many uncertainties right now, you know, who knows? . . . [T]he levee's the main thing. Will the levee hold, because it was set up on category three, and we all know that didn't work out. There's constant feedback from the media that just when you think you were comfortable coming back and media puts something out like, "Well, I don't know. Set up for a category three." . . . Now you realize the soil isn't right—it's like, "Oh God! What else is going to happen?" So you have that feeling of uneasiness about coming back when you don't know . . . whether or not you start putting all of your blood, sweat, and tears into building your house again, and then hurricane season starts in June, and you get wiped out again: you are ruined.

The wary concern that Derek expresses may be well placed. According to a panel sponsored by the U.S. Army Corps of Engineers, stated levels of flood protection may not be a resident's best indication of safety. The panel concludes that the hurricane-protection system is a "system in name only" and provides incomplete and inconsistent levels of safety (Marshall 2006).

The lack of accountability and the lack of a credible and independent source of information seem to be principal causes of the noise.

> *Clarisse:* [Y]ou're hearing all these different stories. The Corps, they say one thing and then other people say, "Oh no, that's not true"—you know

14. Zone B is defined as "[a]reas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood" (FEMA National Flood Insurance Program 1984).

> it is all confusing. You're really, like, nervous because you don't know who to believe and who is telling the truth, and they say the pumping stations, if those people would have stayed at their jobs, who were the pumping-station people, that our area wouldn't have flooded, but I don't know [because] those people had to get out too. . . . [T]hey are going to say what they know you want to hear, and I don't believe them anymore, I don't have faith or trust in them.

It is not clear, even to Clarisse, who "they" are, but she is certain that she cannot trust them to give a clear indication of risk or, presumably, to provide the protection that would reduce that risk.

The NFIP is yet another source of noise. Critiques of the program tend to focus on the system's profound inefficiencies and perverse incentives—and reasonably so. According to David Conrad of the National Wildlife Federation, just 2 percent of the homes insured under the program were "repetitive loss properties"—those suffering damage at least twice in a ten-year period. Yet those 112,000 properties generated a remarkable 40 percent of the losses (Warrick 2002; "Now What?" 2006).[15] Though private insurers increase the premiums on repetitive-loss properties or deny coverage altogether, the NFIP rarely forces property owners to consider the full costs of their decision to live in flood-prone areas. Thus, not only are taxpayers left to foot the bill for these choices, but the program dramatically distorts the signal that would otherwise guide property owners away from areas prone to flooding from any source.

To add insult to injury, the NFIP's operation creates both additional noise in the private insurance market and opportunity for private insurers to sidestep their responsibilities to policyholders (Buckley et al. 2006). The subsidized rates offered under the NFIP crowd out private alternatives except at the highest end of the market. Although property owners may apply for flood insurance through a private insurance company, that company acts only as a broker in the transaction. All premiums go directly to the NFIP, and all claims are paid by the NFIP. Thus, the private insurer covering property loss has a strong incentive to attribute as much damage to flooding as possible.

> *Frank:* [The adjuster said,] "Well, see right here. You got a $10,000 computer coverage. . . . So did you have your computers above eight feet of water?" I said, "No, the computers were at the cashier counters." Scratch that out.
>
> *Interviewer:* What does "scratch that out" mean?
>
> *Frank:* It means they didn't pay me.

15. According to Warrick, "The all-time spending champion was a house in Houston that flooded 16 times and sucked up $807,000 in repairs—seven times more than its market value" (2002).

> *Interviewer:* Because they weren't above eight feet?
>
> *Frank:* Correct. 'Coz it was considered flood damage, even though I had a separate policy for that. . . . We were heavily looted during the process. We had $8,000 cash in the drawers. And he says, "You had any cash drawers above eight feet of water?" I said, "No." You know, the cash checkout counter is right here. I took pictures of it. The drawers are popped open. . . . I sat down and thought about this afterward. I said, "OK, guy, how does water affect cash? If it wasn't looted, it'd still be there. OK, it'd be wet, [but] I could dry it up."

Not surprisingly, property owners and industry watchdog groups tend to blame the situation on insurance company greed, but the question remains as to why competitive forces have not eliminated the systematic practice of the "flood/no-flood tango." The NFIP operation eliminates the potential for full comprehensive coverage with the same insurer, which would allow policyholders to avoid the quandary of determining whether damage was caused by wind, flood, or looting and probably would lead to faster and more efficient settlements.

Questions about the strength of the levees now being rebuilt and the government's failure to give a clear, consistent answer on these questions have further stymied rebuilding. Elected officials and bureaucrats have made contradictory and frequently uninformed statements about how, where, and when the Corps of Engineers will rebuild the levees, thus leaving residents in limbo when making decisions about rebuilding. The unknown future of the Mississippi River Gulf Outlet (MRGO, or "Mister Go") similarly exacerbates this uncertainty. Without knowledge about whether their homes and businesses will receive category-two or category-five levee protection, residents have been unable to make informed choices, and the government's previous failure to build levees that performed to their advertised standards has only exacerbated this uncertainty. In short, government action has created and continues to create a noisy decision-making environment, leaving many businesspeople and residents in a state of indecision and thus in turn slowing the pace of postdisaster recovery.

Redevelopment Planning Noise

> The [committee's] charge was, literally, to create order out of chaos.
>
> —Bring New Orleans Back Fund 2007

In the summer of 2006, the Greater New Orleans Foundation and the Louisiana Recovery Authority received a $3.5 million grant from the Rockefeller Foundation to carry out a development-planning process for the city of New Orleans. Mayor Ray

Nagin and the New Orleans City Council agreed to adopt this planning process as the Unified New Orleans Plan (UNOP). This announcement was viewed in most quarters as a positive sign that the recovery effort in New Orleans would at last be moving forward. Under the leadership of urban planning firms Villavaso and Associates and Henry Consulting, the UNOP group has proposed a comprehensive citywide plan.[16]

Though many New Orleans residents treated the UNOP's launch as welcome news, the year following Katrina brought forth good reasons for caution if not for skepticism as to whether the planning process would deliver as promised. Criticism of the citywide plan suggests that the problem of signal noise is likely to persist under the UNOP. According to a report issued by the Bureau of Government Research, "The Citywide Plan declines to create firm criteria for decision-making. The plan declines to be clear about timelines or priorities. The plan instead chooses to maintain the indecisive and confusing approach that has characterized New Orleans' recovery for a year and a half" (2007).

Almost immediately following the storm, in October 2005, Mayor Nagin launched a similar process under the guidance of the Bring New Orleans Back (BNOB) Commission. By May 2006, however, the BNOB planning process had effectively been abandoned, reportedly for a lack of funding. The brief period in which the BNOB Commission controlled the redevelopment planning process might easily be written off as a somewhat awkward but ultimately inconsequential stumble in what will be a long march toward recovery. Yet this episode also helps to explain why community rebound was kept to a halting pace at a critical time, and its effects may be lingering still. At every turn, government planning initiatives have thrown into doubt the basic rules of private property and contract in place before the storm. Recalling Higgs's explanation of the slow pace of economic recovery following the trough of the Great Depression, we may say that in the critical months following Katrina, government-led redevelopment planning created and perpetuated significant *regime uncertainty*. Given the shifting rules of the game, residents, business owners, and potential investors have been forced into a waiting game.

When Mayor Nagin created the BNOB, he also established a Washington-based think tank, the Urban Land Institute (ULI), as the commission's source for urban-planning expertise. Though the BNOB's Urban Planning Committee assured New Orleans residents that they would have representatives on the committee (along with experts in urban planning, historic preservation, environmental health and safety, and public finance), the ruling paradigm was clear: the city's redevelopment could not rest in the hands of private citizens. Successful redevelopment would depend on a well-funded and well-orchestrated comprehensive plan. The authority to carry out the plan

16. The City Planning Commission presented the Citywide Strategic Recovery and Rebuilding Plan developed by the UNOP group to the city council on March 7, 2007 (see the information at http://www.unifiedneworleansplan.com/home2/). At the present writing (May 2007), approval by the city council and the mayor is still pending.

would rest with the Crescent City Recovery Corporation (CCRC), an agency created to oversee the redevelopment process. "To be effective at the enormous task of rebuilding the city, the CCRC must have the powers to receive and expend redevelopment funds, to implement the redevelopment plan, to buy and sell property including use, as a last resort, of the power of eminent domain" (Bring New Orleans Back Fund 2007). The wisdom of giving government virtually unlimited authority over the redevelopment effort and the assumption that it would take billions of federal dollars to do the job were never in question. The task before the BNOB Commission was simply to figure out what and how to plan and what powers had to be extended to the CCRC. In order to ensure that the CCRC had the authority it required to carry out the redevelopment planning effort, the commission recommended "tak[ing] away from the City Council the ability to reverse decisions by the city Planning Commission and let appeals be handled by the court. Both moves would need voters to amend the city charter" (Staff Reports 2006).

In November 2005, the ULI sponsored a public forum at which fifty urban-planning and postdisaster specialists presented recommendations. In addition to the creation of the CCRC, the panelists recommended dramatically reducing the city's "footprint" and transforming some low-lying neighborhoods into green space and industrial centers (Carr 2005). The areas targeted as likely candidates for forced buyouts included most of New Orleans East, Gentilly, the northern part of Lakeview, much of the Lower Ninth Ward, Broadmoor, Mid City, and Hollygrove. This relatively low-profile event did not attract many residents, but in January 2006, when the ULI presented these recommendations as part of the BNOB Commission redevelopment plan, the ballroom was packed. In its $18 billion plan, the commission recommended that a committee create a redevelopment plan for each of the city's thirteen districts to determine the future viability of their neighborhoods. To regard an area as a "viable neighborhood," the planning committee had to demonstrate that 50 percent of its residents had returned or were committed to returning. Neighborhoods that failed to meet the threshold of viability were candidates for forced buyout. The time frame for the planning process was not to exceed four months. The commission recommended that during this four-month period a moratorium be placed on the issuance of rebuilding permits in neighborhoods that had experienced at least two feet of flooding—which was approximately 80 percent of the city.

Though the public outcry led Nagin to reject the building moratorium, the underlying paradigm of centralized redevelopment planning was not relinquished, and it still has not been rejected (Russel 2006). In May 2006, Nagin announced that the basic blueprint adopted by the BNOB Commission would set the agenda for his second term. Although the Citywide Strategic Recovery and Rebuilding Plan developed by the UNOP group recommends voluntary programs to elevate homes and relocate residents out of the most flood-prone areas, Edward Blakely, executive director for recovery management (colloquially known as the "recovery czar"), has suggested that voluntary programs may not be enough: "Everyone should be allowed

to rebuild, but that doesn't necessarily mean everyone should be allowed to rebuild in exactly the same place they rebuilt before" (qtd. in Russel 2006).

The BNOB Commission's recommendations set out rough guidelines for the planning process and took aim at individual initiatives that contradicted the commission's redevelopment vision. The logic articulated by the commission was that until federal flood maps were issued and neighborhood viability determined, it was best not to allow property owners to invest further in homes that might have to be abandoned later (Cobb 2006).

Combined with the noise generated by federal management of flood protection and risk assessment, the BNOB Commission's model of neighborhood planning—a sort of grassroots planning under threat of elimination—was destined to fail as a redevelopment tool. The very thing the commission identified as the reason for not allowing rebuilding to move forward—the lack of FEMA flood maps—made a meaningful viability study impossible because people were unwilling and unable to commit to the rebuilding process under such conditions. The commission's recommendation to disallow rebuilding and to use the city's power of eminent domain to "consolidate neighborhoods" and turn low-lying areas into green space introduced further noise, throwing into doubt any clear plans people might have had to return in the near future.

More important, placing the burden of proof on neighborhoods to justify their continued existence created significant regime uncertainty by shifting property rights from the owners to the redevelopment planners. Residents seemed to understand that this transfer was happening. At the prospect of a forced buyout, Lower Ninth Ward resident Carolyn S. Parker shouted over the crowd assembled to hear the BNOB's recommendations, "Over my dead body!" (qtd. in Cobb 2006). Harvey Bender, also a resident of the Lower Ninth Ward, elaborated: "If we have to suit up like [an] army and protect my land, that's what I'm going to do. I don't need no police to protect me. If you try to come and take my land or whatever, that's what I'm going to have to do. Just like that lady say, I'm going to die on mine" (from an interview in Allen 2006).

Home demolitions mandated by the city further heightened the sense that the rules of private property no longer held. Calvin Hampton, while in the process of cleaning up his Lower Ninth Ward home, returned to New Orleans from his temporary residence in Arkansas on May 2, 2006, to find that his home had been bulldozed. Three weeks later he received a letter in the mail saying that his home was eligible for destruction after May 4. His property was not listed for demolition on the city's Web site (www.cityofno.com) as late as May 24. "It's like a push-out," he told our interview team. He was particularly curious about why his insurance company apparently thought he had sustained relatively minor damage, whereas the city thought his house was "in imminent danger of collapse"—the criterion it uses to demolish houses not on the public right-of-way.

Other factors contributed to the sense that the basic rules on which society is

based were under attack. Reports that police had prevented storm victims fleeing floodwaters from reaching higher ground suggested to many residents that the rule of law had been suspended (Bradley 2005; CNN 2005). The city's apparent unwillingness or inability to enforce many pre-Katrina contracts also contributed to the regime uncertainty (Quillen 2006). The fact that city officials prohibited residents from returning to their properties, in some cases for four months following the storm, was further indication that the property rights people thought they possessed prior to the storm were now in doubt (Brooks 2005). The BNOB Commission's recommended moratorium on rebuilding and its appointment of private developers to key planning committees, even though the developers would be the principal beneficiaries if eminent domain proceedings were used, also affirmed that the basic rules of ownership no longer applied (Davis 2006).[17] Even the planners understood that the rules of the game had changed, and they said as much. According to a panelist at the ULI Public Forum, "[New Orleans] housing is now a public resource. . . . You can't think of it as private property any more."[18] Under such conditions of regime uncertainty, it is reasonable to expect that residents, business owners, and potential investors will remain sidelined.

The New Orleans story illustrates the vicious cycle that can emerge between public policy, signal noise, regime uncertainty, and further signal noise. Government subsidization of flood insurance snuffs out one of the critical market signals that would otherwise cause individuals to internalize the costs of living and doing business in flood-prone areas. This systematic failure to take such costs into account renders a city such as New Orleans—a city that is in certain places six feet below sea level—highly vulnerable. In the aftermath of what was an all-too-predictable disaster, policymakers likely felt justified in shifting or revoking the rules of private property to ward off future disasters, but such actions generate regime uncertainty and even more signal noise because the value of resources is much more difficult to assess when property rights are attenuated (Fischetti 2001).

The fact that post-Katrina regime uncertainty and signal noise have their origins in pre-Katrina flood-protection and flood insurance policies might suggest that the slow pace of recovery is not, after all, such a bad thing. Indeed, many reputable scholars have argued that rebuilding has not been too slow, but rather too fast (Kusky 2003; Klaus 2005). But if it is indeed the case that no rebuilding would occur in vulnerable areas if investors and property owners bore the full costs of their decisions, such an outcome could be accomplished much more effectively by eliminating the signal noise created through subsidized insurance and flood-protection programs

17. Given that Katrina struck only months after the Supreme Court's decision on eminent domain in *Kelo v. City of New London* (545 U.S. 469 [2005]) residents might reasonably have expected the use of eminent domain to favor the interests of private developers over property owners.

18. This observation, reported in the *New Orleans Times Picayune*, November 19, 2005 (Carr 2005), is attributed to Tony Salazar, president of McCormack, Baron and Salazar and a ULI Public Forum panelist.

rather than by perpetuating the current state of regime uncertainty, which inhibits people's ability to get on with their lives. Further, although some forms of development may be physically and financially sustainable even in flood-prone areas, such solutions, if they exist, can be discovered only in a context of market exchange and investment. The transactions that would move resources into the appropriate hands and inspire such investments are much more likely to occur if the rules of property and contract are clear, credible, and enforced—in other words, if regime uncertainty is eliminated.

Policy Implications

Following a catastrophic disaster, the immediate concerns of federal and state relief agencies should obviously be to ensure the health and safety of disaster victims. Once these immediate concerns are met, the reestablishment of working social and economic systems ought to take priority because they are the foundation on which long-term recovery must be constructed. At that time, contrary to generally held opinion, public policy can help most effectively by scaling back relief as soon as possible, creating in advance an alternative regulatory regime appropriate to postdisaster environments, devolving power over the rebuilding effort, and avoiding or eliminating policies that contribute to regime uncertainty.

Scaling back government relief allows commercial and civil society to step in. In order to minimize signal noise that inhibits the responses through markets and civil society, government at all levels should scale back its efforts as soon as possible to make room for markets and voluntary organizations to provide basic supplies, food, cleanup, and construction services. Further, if markets are to rebound robustly, employers must be able to attract employees. Employment of local workers by relief agencies should not be undertaken with the aim of creating jobs. Rather, such employment (and any wage premium associated with it) should be offered only in connection with the high-priority relief tasks at hand and on a short-term basis.

Well-intentioned relief policies that extend unemployment benefits excessively will exacerbate the labor shortage and hinder economic recovery. To minimize the distortionary effects of postdisaster relief in future disaster situations, financial assistance should take the form of one-time payments, with assurances that no other grants will be forthcoming. Such assistance should be offered regardless of employment status. This arrangement will provide disaster victims the immediate incentive to return to work if they can, reduce the distortions in the local labor market, and avoid the politically difficult decision to cut off the stream of unemployment benefits.

Another way to foster a robust private response is to replace direct provision of relief services with vouchers wherever possible. Instead of temporary trailers, for example, a housing voucher of a given amount would serve victims in a much wider variety of circumstances. Voucher funds might be used to rent or purchase a trailer, rent an apartment, renovate damaged property, make a down payment on a new

home, or purchase a small modular home—a "Katrina Cottage"—that can be enlarged later. Such a policy would be vastly more efficient than temporarily providing everyone with a $70,000 FEMA trailer, and it would inspire a wide range of market responses to meet disaster victims' housing needs.

Creating in advance an alternative regulatory regime appropriate to the postdisaster situation allows commercial and civil society as well as local leadership to respond more robustly. Bottom-up response from commercial and civil society will be more robust if regulatory burdens on private industry and voluntary organizations are scaled back for a given period—say, one year—following a large-scale disaster. Cities, counties, and states can adopt emergency regulatory standards in advance of a crisis. Such "regulatory preparedness" would reduce the uncertainty that stems from the slow-moving political process and would establish alternative regulations for the postdisaster situation when, for example, child-to-adult ratios in daycare centers, normal debris-disposal procedures, and pollution-control gasoline formulations may not be appropriate (Walling 2006).

These rules would ideally include a clause for automatic execution after, for example, a presidential or gubernatorial declaration of a major disaster. An automatic trigger for such a regime reduces special interests' ability to attempt to alter the process or to change individual rules. Implementing the alternative regulations automatically and as a complete package speeds enactment of the alterative regulatory regime and ensures that people know before a disaster strikes what to expect in its aftermath. An automatic trigger would also be in line with existing policies; a presidential disaster declaration already triggers dozens of automatic responses under the Stafford Act and other legislation. In many cases, bureaucrats in the Gulf Coast have had to bend or break the rules in order to make progress in recovery efforts. An alternative regulatory structure that recognizes the different cost-benefit configurations in a postdisaster situation would reduce noncompliance and help to ease some of the bottlenecks that retard recovery. Most important, it would foster the sending of quick and clear signals that communities need for rapid recovery by reducing the noise associated with regulations changed on the fly and with selective and unstable enforcement on the ground.

Similarly, federal agencies need to consider reforms to permit more flexibility with regard to which regulatory standards remain in place in the event of catastrophic disaster. For example, adhering to historic preservation standards makes little sense when a community has been under eight feet of water for two weeks. Yet FEMA currently must follow Section 106 of the National Historic Preservation Act even in the post-Katrina context, and no waivers are available. The same holds true for the National Environment Policy Act. Though no advanced planning can be perfect, some of these priority assessments can be made before any particular disaster occurs, and "best practices" guidelines can be developed to help FEMA representatives, in consultation with local communities, make wise discretionary decisions when the crisis comes.

Devolving power over the rebuilding process gives local leadership more discretion to allocate resources appropriately. Local ownership of the rebuilding process is critical. Federal response should not erect roadblocks to competent local leadership, but should instead support and inform effective decision making on the ground. According to FEMA officials we interviewed, the process is supposed to work in exactly this way, giving local officials a wide berth to serve their constituents as they deem best. The frustrations expressed by school and hospital administrators, however, suggest that practices on the ground do not live up to this ideal. Instead, the Stafford Act provisions and the narrowness with which FEMA representatives frequently interpret them unnecessarily tie the hands of local leadership. Recovery efforts should be managed locally whenever such management is feasible; that is, decision making should be kept as close as possible to those with the actual needs and the relevant knowledge.

To foster this change in "corporate culture," Congress should shift the primary responsibility of government relief agencies from regulatory oversight to support and advice. Although policymakers may deem it necessary to enforce some general guidelines for safety and accountability, local leadership also needs the flexibility and discretion to make marginal choices about how relief funds are spent.

Policymakers can hasten recovery by avoiding action (and inaction) that generates regime uncertainty. The best way policymakers can avoid problems of regime uncertainty in the aftermath of a disaster is to respect and continue to enforce private-property rights and the rule of law, so that individuals, communities, and commercial and civil society organizations can manage the rebuilding themselves. To the extent that the government deems it necessary to adjust rules pertinent to the rebuilding process, such adjustments must respect the basic freedoms afforded by private-property rights and the rule of law. Further, such rule changes must be made quickly, clearly, and credibly. Government can support the rules necessary for individuals and communities to recover by acting as an umpire: providing police protection and courts of law to settle contract disputes and, most important, not changing the rules in the middle of the game.

With private-property rights, contract enforcement, and the rule of law assured, the recovery process can begin in earnest as residents and business owners decide how and when to rebuild. If policymakers draw out the decision-making process about key rules and policies, the signals that civil and commercial society receive are likely to become noisy and hence less useful to those engaged in the rebuilding process.

In the redevelopment-planning process, for example, it is essential that government agencies and commissions ensure that the institutional rules are clear and stable. The planning authority should avoid picking winners and losers in the postdisaster economy. To the extent that local, state, and federal authorities are engaged in redevelopment planning, they should strive to produce as little signal distortion as possible—for example, by offering general tax credits for all businesses rather than targeting particular industries or businesses that existed before the disaster. If the

plans bear even a hint of government sanction, cavalier proposals that individual property rights should not be honored will create unnecessary regime uncertainty, not just among those most directly affected, but also among neighboring communities and potential investors. Just as an ill-considered comment by the chairman of the board of governors of the Federal Reserve System can have massive effects on the stock market, a poorly considered utterance by a mayor or governor can cause people to rethink their plans radically in the wake of a disaster.

Although the minimization of signal noise will facilitate a more rapid recovery, swift recovery is of little use if people are only setting themselves up for a future disaster. Persistent signal noise, particularly in regard to flood risk, often leads people to ignore the real costs of living in flood-prone areas. Meaningful market signals that force people to take into consideration the true costs associated with rebuilding their homes and businesses are essential if communities along the Gulf Coast are to guard against future disaster.

If policy reforms are to reduce signal noise with regard to flood risk, the NFIP must at the very least adopt actuarially sound premiums. As long as the NFIP subsidizes flood insurance premiums, people will continue to ignore the true costs of living in flood-prone areas. Of course, FEMA flood maps must include risk assessment of all possible sources of flooding (levee breaches as well as natural sources) if flood insurance premiums are to be actuarially sound.

As long as the NFIP exists, however, private providers of flood insurance will be crowded out or will continue to have an incentive to falsely attribute damage to flooding so they don't have to pay out. Abolition of the NFIP would open a way for insurance companies to offer comprehensive policies, avoiding the torturous "flood/no-flood tango" that invariably follows in the wake of flood-related disasters.

Finally, the appropriate government authority must decide swiftly what level of flood protection will be provided and make a credible commitment to honor that decision. In order to acquire that credibility, an independent entity such as the U.S. Government Accountability Office might assure that stated levee protections are being maintained. Independent review of Corps of Engineers projects would be a move in the right direction. Better still would be a mandate that levee boards seek unsubsidized, private insurance because such a move would help to assure financial as well as administrative accountability. Nonetheless, as long as government is responsible for the provision and maintenance of flood-protection systems, the process will be vulnerable to political manipulation. To be sure, a decision regarding the level of protection to be provided will be highly contentious. Whether the New Orleans levees ought to be rebuilt and, if they are, what level of protection they should provide are questions that deserve serious deliberation but cannot be answered here. My point is that as long as government manages flood-protection systems, its failure to decide clearly and expeditiously what it will do and then its failure to carry through on its commitments ensure that the state of limbo in which so many storm victims now find themselves will continue.

Conclusion

Given the devastation wrought by Hurricane Katrina, recovery cannot happen right away. Nevertheless, the accepted wisdom that in the face of this challenge more government response is preferable to less ignores the distortionary effects such a response can bring. Whatever benefits government intervention might bring to an area devastated by an act of nature or man, these benefits must be weighed against the potentially large costs imposed by the introduction of signal noise. As communities emerge from the immediate crisis and set out on the long road to recovery, this trade-off becomes increasingly relevant. Effective recovery, even in the wake of catastrophic disaster, depends primarily on the social and economic systems that coordinate people's daily life. It is imperative that public policy play only a supporting role to these systems rather than create signal noise that inhibits their successful reestablishment.

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